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[*Photo: Anderson, Rome*

HUNTING-CHEETAHS AND OTHER ANIMALS OF THE MEDICIS. *Page* 102.

From a fresco by Benozzo Gozzoli in the Palazzo Riccardi, Florence.

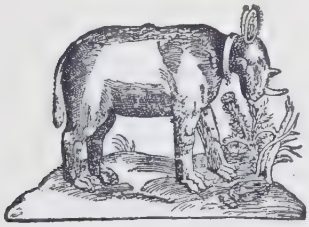
NOAH'S CARGO

SOME CURIOUS CHAPTERS OF NATURAL HISTORY

BY

GEORGE JENNISON
M.A., F.Z.S.
FORMERLY CURATOR OF THE ZOOLOGICAL GARDENS, BELLE VUE, MANCHESTER
AUTHOR OF "NATURAL HISTORY: ANIMALS" AND "THE HORSE"

WITH THIRTY-TWO FULL-PAGE ILLUSTRATIONS FROM ANCIENT MSS. AND WOODCUTS, FROM ENGRAVINGS AND PHOTOGRAPHS



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TO
MY SISTER

PREFACE

HIDDEN in sombre caves of Southern France and Spain lie the first thrilling tales of fights between men and beasts. In the tombs of Egypt, in Nineveh and Babylon, the lordly courts of Assyria, hidden for centuries beneath the drifted sand, are pictured man's strenuous and long doubtful fight for the mastery of the fields, his conquest, and in the end his pride of capture—his zoological garden.

In the Vedas of India, in the sacred ceremonial books of China, where civilizations had died ere ours began, in the records of proud Persia that withstood the zenith power of Rome, one finds strange tales of beasts. The Greek and Latin writers add Africa to our knowledge, and the savage denizens of the cloudy North—the Baltic coasts and wild, uncivilized Britain—bear us forward five full centuries, lessening but not bridging the gap of our knowledge of animal-keeping, which comes down through the history of the Italian city states, the magnificent caravans of Constantinople, the

wondrous menagerie of Louis XIV., and so to modern times.

Animal books are thick upon the ground as leaves in autumn. We turn our fresh, green leaf in the spring of the world at the dawn of civilization that, in the fulness of time, some new refreshing fruit may be found. Such is our aim and hope.

GEO. JENNISON.

Barwicke Lodge,
Disley, Cheshire, 1928.

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He is also indebted to Dr. Mingana of Rylands Library, Manchester, for help in the study of Oriental documents; and he would, at the same time, acknowledge the ready assistance in research and the opportunity to reproduce prints from the Firdausi Sâh-Nâmah (*"The Book of Kings," written in North India about A.D. 1570*) *and other rare manuscripts and volumes in the Rylands Library and Chetham's Hospital Library, Manchester.*

[Australian Commonwealth Photo

SULPHUR-CRESTED COCKATOOS

NOAH'S CARGO

1

THE PARROT

"WELCOME" was the parrot's greeting to Europe. It came in Greek, χαίρε, through Ctesias, a Grecian slave, who, by his skill, became Court physician to Artaxerxes in 401 B.C. In his *Indice*, or account of India, he writes enthusiastically of this bird, ὁ βίττακος, the blossom-headed parrakeet, that speaks the Indian language by nature and can be taught Greek. Aristotle, about eighty years later, calls the green, ring-necked parrakeet ψιττάκη, *psittake*; it is the same word in the softer language of Ceylon, whence it was brought by Isonocritus, Alexander's Admiral. He explains how well the thick tongue and the sounding space in the beak fit the bird for human speech, and he adds quite truly that it can be intoxicated. Aristotle goes no farther, but others added much to the statement. "It talks best when drunk—is very clever at drawing corks—a boon companion—a merry fellow that kisses the maids"; they omit the mistress, but they meant her too. "Per Baccho" came as easily to it as "Ave" or "Vale," and

a good talker with a fo'c'sle education probably fetched a higher price for a Roman tavern than a sporting publican would pay to-day in London.

The rage for the birds was universal, they were the favourites of the Greek maidens and so popular in Rome that the stern Cato (200 B.C.) blamed them as spoilers of the republic.

"What is the city coming to when the women bring up lap dogs, while the men bear parrots on their wrists!" But his thunders had no effect; the women loved them; poets wrote verses in praise of their wit and beauty—they were honoured in life with cages of gold and ivory, and when dead received the holy rites and a lasting memorial; they cost as much as a slave, very often far more.

Their extravagant admirers claimed that they could detect a poisoner and denounce him in a house—how, it is hard to say, unless they tasted the liquor; and their beak was so hard that they could fall upon a rock without hurting themselves. The absurdity of such a remark about a bird did not strike them, but it was unfortunate for the parrot, as an iron rod was considered necessary to correct its faults.

The popularity of the bird in court and palace is not surprising; that it was not a common object of the countryside is one of Nature's mysteries. Many parrots can withstand the rigours even of the English climate, many have their liberty in England, and there would be more but for the fool with the gun.

Why were they not found in the countries bordering on the Mediterranean ?

From that distant time when the great land masses of the world stretched east and west, the five hundred species of parrot have been found, often in countless myriads, from Northern India to the islands off the south of New Zealand, where a little parrakeet burrows under the tussocks of withered grass and makes a tunnel-shelter from the bitter winds. They are found in Africa south of the Sahara and in the Americas southwards from the United States. Closely related to the hawks, whose spirit they show in combat, and against whom, for example, on the island of Thomé, they wage successful war, strong on the wing and hardy, the physical barriers scarcely seem sufficient to have barred their progress.

But the parrot is a mass of contradictions. On the Equator, where Nature paints beasts, butterflies, and reptiles with her most gaudy colours, and a white elephant is the symbol of all that is rare and holy, there are white cockatoos who have as neighbours the black banksia and the purple lories.

The parrots are as diverse in size, actions, and habits ; some are four inches long, some forty ; some stand bolt upright, others live upside-down. Many choose for preference the topmost branches of the barest trees, others live in the grass, and some make burrows. The deep-sea channels in Polynesia have so specialised the races that some,

like the lories and pigmy parrots, have hairy tongues and live on honey ; others, thin-beaked birds, seek insects in rotting wood ; while the macaws, the gaudy glory of American forests, are armed to break into Nature's storehouse with a beak that can cut wire. Centuries ago their lustrous feathers were the panoply of Montezuma's warriors, the most honoured ornament of the Mexican gods, and to-day, though harassed by active enemies—jaguars, forest cats, and predatory monkeys—these stout, strong-flying, often vicious birds still wheel with raucous cry above the primeval forest and flash the sunlight from their glistening breastplates of red and blue and gold.

The ground parrot of Mauritius, on the other hand, grown flightless by lack of enemies, has met an inglorious fate, a prey to settlers' dogs; and the night parrot, the Kakapo of the Maoris, that feeds on mosses and lichens and spends the day in a burrow, is likely to come to a similar end.

A big, strange bird this, with a powerful beak, bristled round with stiff, black, hairy feathers that give it an air of extreme fierceness, but it is really a kind of avian bulldog, very gentle, playful, and intelligent.

Perhaps the New Zealanders will manage to protect it, just as it is to be hoped they will succeed in exterminating the parrot, called Nestor from its hoary head, that has obtained a unique and unsavoury reputation from the systematic attacks

made upon living sheep. The habit is not universal among the Keas and Kakas (both being of the same species—the Nestors), nor is it known how it arose ; according to some it came from eating offal in the stockyards, other authorities believe that the bird at first mistook the animal for a plant which it was accustomed to search for grubs, the *Raoulia Mammillaris,* which from its shape and woolly leaves has been named the vegetable sheep.

But whatever the beginning, and however limited the circle of vicious birds, the evil is serious enough, and the manner of attack is well established. The parrots, wheeling down in flocks, pick out a sheep at random, and one after another peck at a spot on its flank until it leaves the flock. They keep it running until it becomes stupid and falls. Two hundred sheep were killed in this way in one night near Lake Wanaka, South Island. Kea and kaka are names coined from the call of the birds, and so are lory, macaw, and cockatoo. All these and other parrots possess in a greater or less degree that love of mimicry and the wonderful imitative power that have made them through the ages the favourite of man. Rare is the savage tribe that has not tamed the parrot and taught it human speech. Yet—strange exception—the Africans make no attempt to educate the Grey, the finest talker in the world of parrots. Many birds are good mimics, but only few, and these with difficulty, reproduce the human voice. The parrot, endowed by Nature with a fleshy and most mobile tongue and mandibles

well hollowed as a sounding-board, is in a class apart.

In every language the name of the talking parrot is made of labials or palatals, the easiest sounds in parrot speech; compare, for example, *Bittakos* in Greek with *Koulas budi*, the West African name of the Grey Parrot.

The Arabic, *Baboghai*, is as easy as the Greek name. Rome and the Roman Empire had passed away, and with it all remembrance of the parrot when the Arab traders brought it to adorn the luxury of Venice. With it came the new name, corrupted into *Papagaio* in Italy, *papegaut* in France, *popinjay*—the gilded popinjay of England—even the Greeks adopted it in the form *papagas*, but of its origin all were blissfully ignorant, and the learned professors of the day are to be thanked for the amusement their derivation has given us. It seems to spring from a stanza in a comic song:

"Tu fis mihi Gaia, ego ero tibi Gaius,"

which may be translated freely:

"You be my Frances, I'll be your Frank."

The parrot is Gaius (*i.e.* Frank), and being a most noble bird—he is the noble Gaius, even pope, that is, Papagaius! Germany still says *papagei*; from France *papegaut* soon disappeared, and *popinjay* was only retained as a term of contempt in England when the two nations received the new bird which the seamen of Spain and Portugal had found on the west coast of Africa—the famous

grey parrot, the finest talker in the world. One of the first imported was sold to a cardinal for one hundred golden pieces; it knew by heart the Pater and the Credo. Men were more religious in those days, and Saint Peter, "Pedro," became the universal name for parrots in the Peninsula. That was not sufficient; a pet must have a diminutive pet name. The Chinese (A.D. 650) called the big and little talking parrots from Tonkin Ying-Wu and Ying-Ko; an especially clever variety they named Poo-Ko or pa-pa, *i.e.* big or elder brother. Evidently these were good talkers, for the emperor who first received them thanked the donor and told him to take the birds south again because they said, "It is cold."

All these names were easy in parrot speech, and so was little Peter—*Perico* or *periquito*—which the Spanish ladies applied to their pets. The birds came north with these names. For linguistic reasons the French took *perroquet*, we parrot (parrakeet we have arbitrarily applied to certain of the long-tailed species), but popular fancy again required a pet name. In Germany it was "Koko," in English "Polly," in French "Jacot" (pronounced Jacko), and under that name Buffon describes the grey parrot. "Pauvre Jacot" still reigns as widely as "Pretty Polly," ideal words for parrot speech but no proof of sex. In parrots, garrulity is generally a masculine characteristic; a small, well-rounded head is the best outward sign of it. Whether they understand what they say is a matter of very divided opinion; the

writer will try to be fair to both sides by stating that he belongs to the negative camp, and giving to the contrary a story that was going the round of Europe in the sixteenth century. The date is 1522 ; the bird was probably from West Africa, one of the new marvels, for it belonged to our Henry VIII., who was not easily satisfied with anything worse than the best. Ornithologus tells the tale.

The bird hanging outside the royal palace, probably at Hampton Court, called to the watermen across the Thames, "A boat, a boat, twenty pounds for a boat." There was a scurry of wherrymen across the river, and the winner, knowing that the bird belonged to His Majesty, went to the royal presence expecting what the bird had promised. The king quite naturally refused such an exorbitant sum. He offered, however, to pay whatever the parrot decided was fair. "Agreed," said the boatman. "Give the fellow a groat," said the parrot.

Why do parrots talk ? Often from vanity and to attract attention, oftenest to amuse themselves. They speak best in the morning and evening, and prefer to be alone. About 6 p.m. on a quiet summer day every parrot in our aviary is screeching or chattering in light-hearted joy. Then, approaching silent and unseen, you may hear every word of their vocabulary.

Give but an inkling of your presence, and all is silent. Curiosity dominates the flock, and the more intelligent the bird the more is he interested in any novelty. He is too occupied to think of talking.

Ignorance of this fact has put many a vain-glorious parrot-keeper on a level with fishermen in the eyes of sceptical friends.

The best talkers are Greys—the Amazons speak more but less distinctly—the Macaws have little to say, but the writer had one, a Lear Macaw, that had caught so perfectly the phrase and intonation of the programme boys, "Guide, a penny; guide and catalogue, a penny," that visitors went to the place to make their purchase. It was, perhaps, the only bird that ever earned its keep; in the absence of the boys its stand was placed in proximity to an automatic vending machine.

Parrots lay white eggs in hollow logs, and feed the young by regurgitation like pigeons, and, like pigeons, they can be homed. The earliest writers on Mexico say "they haunt the houses of the Americans at night and come to man's dwelling just as pigeons do." Thus they are kept to-day in Australasia. "They amuse themselves for hours," writes a friend from New Zealand, "sliding down the tin roofs of the shanties, and one quite up to date accompanied my daughter to the golf links, flew round with evident interest, and, finally alighting, seized the ball and threw it over its head."

Many beasts and birds which are said to live long have only a short existence; the longevity of parrots is indisputable. London Zoological Gardens had a Great Vasa parrot fifty-five years of age in 1908; it may be living still. In the Belle Vue Gardens there are several macaws and cockatoos

whose age and purchase were beyond the thirty years of the keeper's experience in 1897, that look not a whit older to-day. Cocky Bennett, a cockatoo famous throughout Australia, was a mere featherless scarecrow, but he still flapped his stumps and croaked, "Welcome, gentlemen," at 117 years of age. This proved longevity may help the reader to believe our concluding tale. Humboldt, the great explorer, discovered on his travels an Amazon parrot, grey with age, teaching the astonished natives the language of the Atures, a race long vanished from the face of the earth.

2

THE ELEPHANT

BY the action of Nature's universal law, the survival of the fittest, the elephant has grown into the proud position of the most bulky beast upon the surface of the earth.

Geologists show its growth from a creature very like in size and shape to the tapir of to-day, a fossil found on the shores of Lake Moeris in Egypt, hence called the moeritherium; it was followed by the tetrabelodon, "the four-tusked," with teeth in the lower as well as the upper jaw—a very strange creature that soon disappeared, not without leaving an important development, the trunk, an elongation of the nose that had to be at least as long as

the lower tusks, and which grew faster after they had disappeared, drawn out by its own weight and maintained as an advantageous adjunct in the struggle for existence. Thence it passed through the paleomastodon, ever increasing in size and decreasing in the number of teeth until the mastodon and mammoth, which were both about as big as and very similar to our present elephant.

The mammoth is quite a familiar friend. It ranged in the last Ice Age over Europe, and in vastly larger numbers in Northern Asia, where its long, curved tusks dug from the bogs are a very important article of commerce. When it died we cannot say—experts in these matters count the time by centuries of centuries, but to the credulous natives of the swampy tundras of north Siberia it still lives. When the weather is exceptionally hot they sometimes see the huge beast swaying on the bottom of the turbid rivers. It has been preserved in a natural refrigerator for thousands of years so perfectly that dogs will eat the flesh, and scientists can tell us that it fed on fir cones of the great pine forests. The lank, black hair is still in place to prove how correctly our Paleolithic ancestors drew their pictures of the great beast they hunted and ate in southern France and Spain. They imprisoned it also and perhaps made it tame, but how and why we shall never know. Their race and wisdom died and left a blank of many ages. The elephant comes to us as almost modern about three thousand years ago, in India a domesticated

animal, and already the noblest present that a prince could give.

No concrete form can better express the wise saw that "East is East, and West is West" than the cult of the elephant. From almost immemorial antiquity, when the elephant emerges as a war-god, to now, when King George "sits upon the back of the elephant," its might and majesty have symbolised power and rule in India. By nature placid and indolent, easily caught and easily tamed, quick to learn, slow to think, and slower to rebel, it appeals irresistibly with its ponderous bulk and majesty of carriage, to potentates relying on the parade of might and power. Nor was it wanting in manifestations of overwhelming force when arrayed in war against timid and unpatriotic peoples. This irresistible force in war, joined to ready obedience, which white as well as black men still mistake for initiative, raised my lord the elephant to a sort of sacrosanct position, which reached its climax in the adoration shown to white elephants in the Courts of Siam, Assam, and Pegu. "The souls of all men," they say, "pass after a million transmigrations through the body of an elephant," and are thence received direct into the Deity. Therefore the elephant must be worshipped. Further, almost all things white are sacred in India, so rare are they in that country of luxuriant colours. So whiteness in an elephant is an added cause of honour, and hence, by easy transition, the excessive rarity of the colour proves that those who have it must contain

the souls of emperors, and must be served in regal state and take high precedence at Court. Royalty is incomplete without the white elephant, and the more there are the more perfect is the regal power. Both the king and people would consider it peculiarly inauspicious to want a white elephant, hence the anxiety to obtain them. One famous specimen brought about the ruin of five or six kings; it had come into the hands of the King of Siam and was made a *casus belli* by the then powerful King of Pegu. King Aleager of Siam was first in the field with 200,000 men, 5000 elephants, and 3000 camels, but he was defeated; his capital was taken after a twenty-two months' siege, and the sacred white elephant, in a car drawn by camels, in sixty-five days reached Pegu.

Jachard, who saw it, describes it as small and very old—"they said three hundred years. He was attended by a hundred men who fed him out of vessels of gold, and he lived in a splendid pavilion." They are usually miserable specimens, but the cost of their keep was so excessive that in bygone days the task of guarding them was sometimes laid on an objectionable noble as a means of ruining him. The custom has enriched our language with an expressive metaphor.

The coach of the King of Pegu was drawn by four white elephants, which marks him as a very sacrilegious, venturesome, or enlightened monarch. White elephants were above work; the others were employed in all manner of labour—the biggest

and best, including all the finest tuskers that could be trusted, were in the army.

This explains an assertion by Aristotle, Livy, Pliny, and others, true at that time, but which we know to be contrary to fact, that the Indian elephants were larger than the African. Pliny compares them thus—as a Nysian horse is to the African elephant so is it to the Indian—which would suggest average African, compared with very large Indian tuskers.

The figures of a few Indian armies give the clue :

Infantry.	Cavalry.	Elephants.
70,000	1,000	700
50,000	3,000	400
600,000	30,000	9,000
150,000	5,000	1,700

The users of Indian elephants had an enormous range of choice ; the African potentates used elephants for war only, and were obliged to put almost all they had in the line. Alexander's lieutenants, the Ptolemies, who became kings of Egypt, made herculean efforts to get on an equality in this matter. A military command was engaged continually in Somaliland trapping the beasts which a fleet of *elephantoforoi*, elephant ships, brought to Egypt ; they got comparatively few. Ptolemy III. tried to persuade the tribes of the Troglodyte country, who killed great numbers by hamstringing and by shooting with big bows worked by three men, to take them alive, but without success. No bribe could move them. "We would not," said the

savages, "accept your whole kingdom as compensation for our loss of sport."

The Periplus of Hanno records large herds of elephants near the coast just beyond the pillars of Hercules (Gibraltar). But the biggest drives for the Carthaginians (205 B.C.) and Romans only took 140 and 100 respectively. These were certainly intended, and indeed very quickly prepared, for war service, but the numbers are negligible. The Carthaginians who relied greatly on elephants, had stabling for 300 only in the casemates of Carthage, and never put anything near that number in the field. Were they usually Indian beasts? These, as we have shown, were larger, and as certainly better trained; they could have been obtained through Syria from Tyre, and transport presented no difficulties: just before the second Punic War a ship of over 2000 tons had been built in Sicily.

Probably both kinds were used; the available illustrations are in general too badly drawn to be useful, but there is at least one Carthaginian coin bearing the head of an African elephant, and a recent find at Carthage seems to the writer decisive on the point. It is a mere scratching on a lead tablet,[1] but if it be an elephant, there is no mistaking the long head of the African beast. The presence of the mahout makes it more interesting. In his right hand he carries the scalprum, a sharp chisel, which, when struck by a mallet, could break

[1] *Musée de Lavigerie de St. Louis de Carthage* No. 2, Second Series; Plate XXII. (Leroux, Paris.)

the neck and kill the elephant instantly. This very valuable safeguard against panic-stricken elephants was discovered by Hasdrubal.

"Scalpro inter aures ictu mallei adacto interficiuntur"[1]—Livy.

There is no evidence of elephant-breeding in Carthage, but a fresco at Pompeii shows an African elephant with her calf.

The Roman opinion of the elephant as a military arm is stated very tersely by Julius Cæsar. During the lightning campaign in Egypt which he described in his famous dispatch, *Veni, vidi, vici,* he wrote to Rome for forty elephants—"they will be no use of course except to make a show."

On his triumph he was escorted by forty elephants bearing torches. Even before his day there were elephants in Rome (and almost to the end of the Empire). They were royal beasts, the property of Cæsar, and were used almost exclusively for imperial pageants. They were given to commoners as a reward for exceptional valour and military service; a certain Cornificius had one on which he was allowed to ride in the streets of Rome: he had saved a cohort in Sicily.

They were killed on extremely few occasions, though they often gave exhibitions in the arena. They were kept in a public zoological garden. Suetonius and Macrobius mention the custom of giving money to elephants, and Pliny says they gave it to the Alexandrines their keepers. Augustus

[1] "They are killed by the scalprum, mallet-driven between the ears."

THE TRAINED ELEPHANT IN INDIA

i. Elephants fighting. From an Indian drawing, about A.D. 1700.

ii. Rustum, the Persian paladin, lassoes an enemy. Illustrating a legend of the fifth century, B.C. *From the "Firdausi Sâh-Nâmah."*

Cæsar, who was passionately fond of Natural History, was evidently a regular visitor to the elephant lines who saw the daily comedy of fear and excitement in handing the money. Could anything be more kindly, humorous, and expressive than his remark to a timid petitioner: "*Putasne te assem elephante dare.*" (Do you think you are giving a penny to the elephant ?)

This public exhibition took nothing from their semi-divine character, and it is not probable that they were used for public amusement, such as carrying children. That the drivers did not ride upon them is evident from a rather curious episode that occurred during the ten days' rule of Julius Didius: an effort to use the elephants against Severus failed because they threw their riders. Elephants resent any novelty even from their masters; new tricks take time. No doubt this failure was considered a bad omen by the people upon whom their bulk, majesty, intelligence, and age made a powerful impression. *Æternitas* is a very common epithet, but quite without reason. Considering their size, elephants have rather short lives. In the elephant lines in India, twenty years' service is far above the average; the best life, recorded in Dr. Mitchell's viability of animals, is under twenty-five years, and by far the longest lived of the writer's own beasts—Sally—purchased when quite a small calf, died showing every sign of old age at less than thirty-seven years. She would have lived perhaps longer in India, although it is obvious that she had

every attention in England. Our winter causes them no inconvenience: Herr Hagenbeck has pictures of elephants in frosts of 45 and 90 degrees, respectively 13 and 58 below zero Fahrenheit. In the extreme cold the animal looks very sick, but, booted and furred and trunk and eyes enclosed, the lesser cold had no effect. A keeper who worked long in Siberia found his elephants did their turns with increased snap and vivacity after a short run from the stables to the circus in the sharp, cold air.

Cold water may do more serious harm. Colic has always been the most dangerous sickness of elephants, and a bottle of whisky with ginger in hot water is a general and efficacious remedy. At Tenbury, in 1875, the local chemist prepared a draught of his own for Mr. Bostock's African elephant, Lizzie; she took it, and was relieved at once from an almost intolerable agony. In Mr. Bostock's words now comes the sequel:

"Four years later the menagerie was back in the same town. The chemist was standing on the kerb watching the entrance of the menagerie to the town. Immediately she came abreast of him the elephant recognised her former benefactor, swung round, deserted the formation, and with a 'honk' of joy almost rushed the gentleman off his feet. Playfully she then fondled him with her trunk, and the procession was held up for several minutes by the animal's exuberance."

Recollections and resentment of an injury occurred

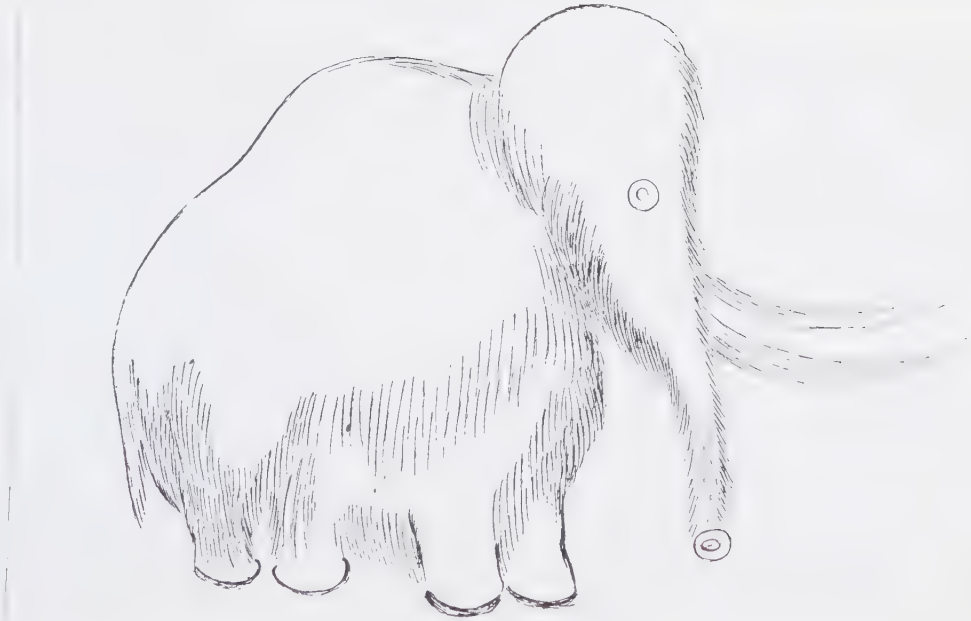
in our own Belle Vue Gardens. One of the writer's cousins developed a desire for elephant training, and made good progress—in the presence of the keeper —but the elephant knew that he was only a fraud and took the earliest opportunity of showing it. He had climbed over the barrier to pick up a penny when she swung her trunk and knocked off his hat in a vindictive effort to knock off his head. This could not be allowed to pass unnoticed ; the keeper was called, and in his presence she received a severe thrashing. The elephant made no attempt to turn upon him, but the first time she saw him pass when she was riding she deserted her stand and rushed at him and so persisted in her efforts to reach him that ever afterwards he had to keep out of her sight.

The animosity that could make her move in disobedience to the keeper's standing order almost passes belief. The ages are full of stories of their implicit obedience that no other will can bend, no force can break. There is the grandiloquent epic of the standard-bearing elephant that was halted when his mahout fell : there it stood heedless of the fight, stood when the battle drove past it, stood until its standard formed a rallying-point and turned defeat into victory. The same spirit is shown in the laughable story of Malachi and Private Mulvaney.

The command to " stand " or move may be given by the slightest sign, but until that comes the creature will suffer the severest punishment even from its keeper rather than disobey.

"Hanno," the elephant presented in 1513 by the King of Portugal to the Pope, refused during ten days to go on shipboard. "It is sad at going so far from its home," said the keeper. But it embarked quickly enough when some one whispered to the king the facts of the case. The keeper was unwilling to leave his little daughter.

In our own day the big African elephant, Jumbo, refused to enter the travelling van that was to take him to America, and all sorts of sentimental rubbish were written of his attachment to Alice, his neighbour. Tips and the halo of publicity were the deciding factors in this case, and the under-keeper's offer to load the animal if the head man were given a week's holiday was followed by a request for another try which succeeded at once, yet Jumbo was a stubborn animal. His last halt was on a railroad track where he was cut to pieces by an oncoming train. His experience with Barnum's show was very different to the kindness and coaxing of the London Zoo—there was no "Come on, old fellow," and no patting. Loading had to be done to schedule, and stupidity was crushed, not coaxed. The scene has been described with a certain vividness. "When the big fellow stuck, we ran a chain round his buttocks, passed it through, and hitched it to a couple of she elephants the other side of the van; a big elephant was brought up behind, and Artingstall sat on the roof with a tomahawk. At the word, 'Go,' down it came and made him duck; the elephants heaved on the chain, the other butted him



A CAVE-MAN'S DRAWING OF A MAMMOTH. *Chapter* 3.

From Breuil's "La Caverne de Font de Gaume, Dordogne" (Chêne, Monaco), by permission of

behind, and Jumbo shot into the waggon like a sack of coals."

Jumbo, when exchanged from Paris to London in 1865, was about three years old, and 4 feet 8 inches in height. At the end of 1882 he weighed $6\frac{1}{2}$ tons, was 10 feet 9 inches at the shoulder, and, over all, 11 feet 3 inches — quite small compared with the 13-foot monsters of hunters' tales, but enormous when measured against the average domesticated animal.

According to Evans: Three hundred male elephants, measured in Burmah, averaged 7 feet $10\frac{1}{2}$ inches at the shoulder; a group of females, 7 feet $5\frac{3}{4}$ inches. A merchant who had handled two thousand only had one that reached 9 feet 4 inches.

The fossil skeleton, unearthed last year at Strood in Kent, was 12 feet 7 inches high. Ancient tusks, nearly 10 feet long, have been discovered. There have been longer ones in modern times. The record weight is 235 lb.

Aldrovandus mentions a pair of tusks that weighed 325 lb.; the two are never alike, one is often broken off, or, if not, is more worn by digging. This is called by the Arabs, *El Hamam* (the servant). Elephants, like human beings, are usually "right-handed."

He quotes further an unknown writer who had seen at Venice a tusk 14 feet in length, 4 feet in circumference, in weight beyond a man's power to lift (as it is to believe). The price was 36 ducats.

About 1700 the Portuguese exchanged in Delagoa Bay tusks for a coarse chequered cloth called Cambaya Lungies, length for length: now ivory is worth a sovereign per pound, and female ivory, the best adapted for billiard balls, costs more. Legitimately, it cannot be obtained. Under licence, two bulls with tusks of 36 lb. and upwards may be shot per annum for £10, plus 25 per cent. of the value of the skin and tusks; other elephants are protected. Nevertheless, many are still killed in out-of-the-way places by poachers whose capture is accompanied by the fights incident to that kind of work. There was a particularly bloody affray of this nature in August 1912 when the leader, an American, named Rogers, was killed. With two friends and a hundred Askaris, he had been after elephants for years in the Lado Enclave. About 1907 it became known that that swampy, thickly wooded district lying almost in the centre of Africa swarmed with elephants. There the tusk-hunters gathered, willingly taking all risks for the gains of the business. Something like 12,000 elephants, worth £500,000 in ivory, were accounted for in that year and the next. Preservation has come not a moment too soon; the elephant breeds from twelve years of age, and has about six calves at four yearly intervals: extermination was coming fast, now the herds are recovering, and in the Iddo bush in Natal have increased so much that thinning is necessary.

Aeroplanes are used to find their haunts. Will

they be employed to discover the marshy resorts of the new Dwarf Elephant and the four tuskers of which hints have recently been heard ? Aristotle said over two thousand years ago, " There is always something new out of Africa." It is still a truth.

3

HUNTING THE MAMMOTH

SOME twenty, thirty, maybe fifty thousand years ago, winter held an almost universal grip on most of Europe. Summer was short and sultry, covering the earth with sudden rank vegetation—tall grasses, mighty forests. Animals were abundant in every part, and man subsisted solely on the products of the chase.

In south-western France broad rivers ran through a country of low, rocky hills, whose flanks were decked with dense forests of sombre fir and pine, the home of numerous troops of monkeys of large size and many races, long-tailed or ape-like. Among the trees the mammoths forced their way, breaking down the branches, gorging themselves on fir cones —the last sustenance at the end of the long period of snow and ice.

The crash of Spring has come ; the hot sun shining from a cloudless sky makes each little hill a mighty emerald, and throws into bold relief the

distant Pyrenees, makes them stand out like some giant sentinel accoutred in a glistening, dazzling coat of snow and ice, guarding the blue of heaven.

From each and every cleft and moraine, torrents are pouring upon swampy lowlands crowded with herds of bison, aurochs, reindeer, and wild horse, with here and there a two-horned rhinoceros, all cropping the fresh sweet shoots of verdure. In this pleasant scene, ruthless Nature is as ever red in tooth and claw. Among the herds the lion chooses his victim, the bear pulls down a fawn, a pack of wolves have cut off a reindeer and are driving it to the inevitable end.

In the shadow of the rocks, where hill meets plain, are grouped a band of eager hunters—tall, hard, and sinewy—prepared by long prayer and abstinence for this great day.

Their wasp-waisted women have danced and sung their Bacchic chorus of challenge and exhortation before the caves that are their dwellings, before the holy mystic figures drawn on the hallowed rocks hidden far in the earth. Their priests have worked their magic, directed the well-flung stone, the flying axe and spear, and by the sacred symbols have assured the slaughter of a truly royal feast.

The wondrous draughtmanship of these Paleolithic men has furnished this bright and busy scene for us, and will complete it in a true, simple, pictured story of their own strife for life.

Yet they are a comparatively backward race, less skilled in drawing, and—far greater handicap—in

fighting weapons still far behind their cousins of the south, in Spain beyond the mountains. These have learned the power of the bow, and how to use the dog in hunting game.

Life must be hard to men armed only with stones and flint-headed spears and axes against enemies so numerous and so big ; yet they survive, beat off their ferocious foes, and find rich banquets in the herds of deer and bison, and even kill the great shaggy beast that towers in size and strength so far above the rest.

When lesser prey are disdained, hunting lore, not chance, leads to the attack upon the mammoth. The swollen torrents have spread far and wide, turning the plain into a soft and slippery marsh, so confining the quarry to well-marked and narrow limits. That heavy body can move only along the higher ground. Thus they can trap him. The chief, a giant eight feet high, has made his plans, not thought them out simply for himself, but engraved them on a stone, that all may read and understand.

" Here is the high ground ; here you divide in bands alongside the mighty beast, and strike him blind. Should he charge, then fly for the soggy land, and let him bog himself." They laugh and nod, and take the field with stores of flints, flint hatchets, and flint-headed spears. Their stones *must* fly—will fly—directed by weeks of sacred study and confidence in the mystic rites. Soon they sight the monster with long-curving tusks,

terrible to look at, but in no way dangerous. He moves away, and they pursue, not pressing near, but quietly, and from afar, closing the rear and moving in or out upon the flanks to drive him in the chosen path. The land is sloping slightly downwards, the ground gets wetter, the great beast slips, then hesitates, and turns. At once the crowd behind is on him with a shout. He turns again, twists slightly to the left—the going is no better—turns again to dash back through his puny foes. Then comes the first stone, hand-flung, a bit below the eye, drawing first blood, but doing no damage.

The beast is angry now, and dashes for his assailant, who flees for safety on the bog—not fast enough, for the huge trunk knocks him senseless, and the ponderous foot presses the body in the mire. A victim, but no respite; the great head comes down lower and makes an easier target. A large, sharp flint has pierced an eyeball; the chase grows easier and more dangerous. To hit the other eye is harder, because the blow must come from a very narrow area on that side where the beast's attention is now concentrated. If he turns, the assailants are few, and good generalship is required to head him in the right direction; he is furiously angry, dashing hither and thither among the trees with uplifted trunk, loudly trumpeting. A heavy broadside poured at short range on the blinded side tells on his ribs, with but little harm, for it goes by chance. They have still to learn the weakest spot in that huge body, but though only a few stones

strike about the heart, these have the effect desired. The great beast wheels and, while he turns, the sound eye is exposed to picked sharpshooters. The aim is strong and true, and a flint crashes through the eyelid and the ball. Now a wild and helpless mass, the mammoth rushes madly, blindly, sliding in the morass, turning, seeking sounder ground, and ever rushing onward. Then the chief displays the highest craft, directs his men to use their stones to hold the animal along a solid path, and drives him by devious ways to the chosen spot—a deep-cut trench buttressed on either side by mitred beams. Into the trench he falls, half stumbling on his head, and there is held. He can, and does, regain a foothold, but he will be free no more. Fast back and front, he is a helpless prisoner; the yelling pack close in upon him, stabbing, hacking until death comes to free the quivering mass of suffering.

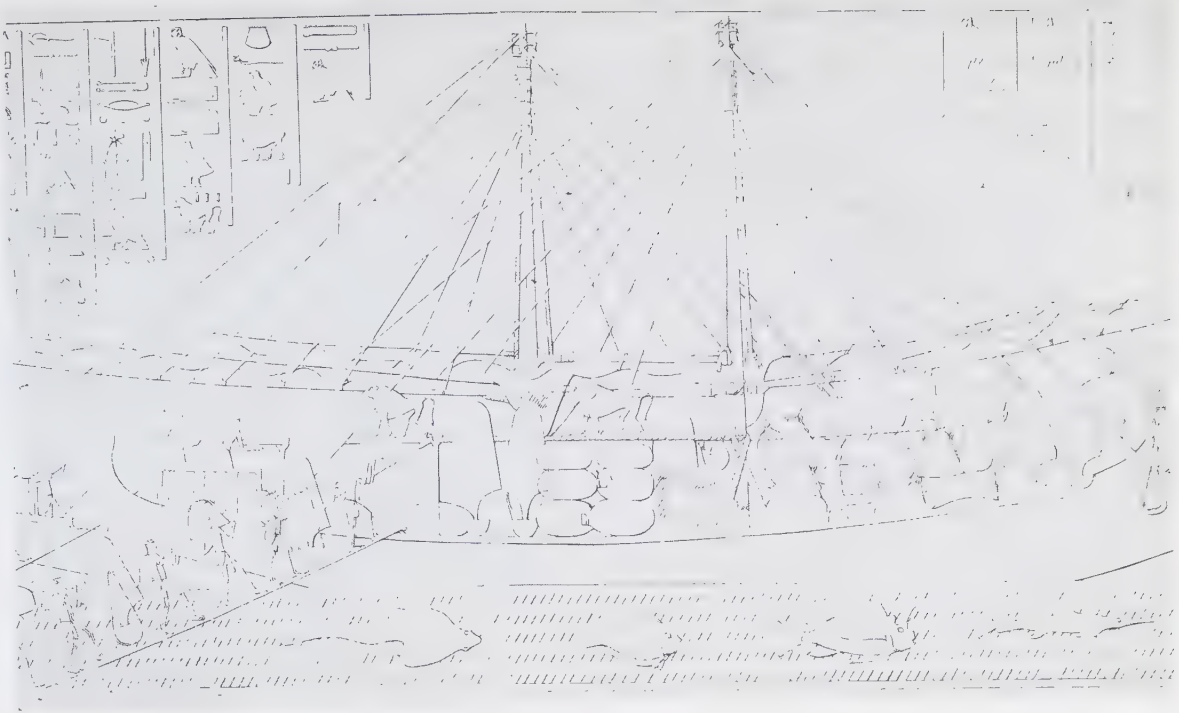
Then the flints chip fire, the tinder smoulders and bursts into a flame, and heaped bracken sends smoke signals to the distant camp, bringing out the women with their baskets for the meat, and sharp flint flakes to cut up the spoil. Heavy axes smash the great marrow bones, soon the flesh-pots are seething, and while the feast goes on the dancers stamp and sway and whirl, in honour of the triumphant warriors. Far into the night their flitting shadows jump and shoot along the rugged shelves of rock, and lose themselves in the black darkness of the caverns they call home.

4

THE WORLD'S LARGEST ZOO

IT is not in Europe or America but among the ancient civilisations of Africa and the East that the largest collections of wild animals have been brought together. The date of these within the last fifty centuries is hard to determine, and it is equally uncertain whether China, India, Assyria, or Egypt is to have the palm of pre-eminence. There were excellent zoological collections in Hindustan one thousand years before the Christian era; at least twelve hundred years earlier than that the Chinese had a system of forest management and game preservation which was closely akin to the best of to-day, and their zoological gardens were replete with novelties that would be the making of any of our present gardens.

Nor were they the mere home products of a beast-ridden land: they were collected with care, and brought from immense distances. For example, in the year A.D. 2, a rhinoceros was sent to Hiao-Pim Hoam Ti by certain barbarians of the south, the Hoam Chi or "Yellow Fingers," a distance of 30,000 li from Java or Sumatra to North China. The distance was great and the difficulties must have been enormous, yet the act was by no means isolated, nor even a record. Hundreds of years earlier still one finds, in the classic of Nan Hua



LOADING EGYPTIAN BOATS IN PUNT. *Pages* 30-31.

The monkeys were evidently allowed full liberty on board.

From Naville's "Temple of Deir el-Bahari" (Egypt Exploration Society).

(550 B.C.), this discourse of Chuang Tsze, the tattered scholar:

"Has your Highness never seen a dancing ape which entwines the pliant twigs of the Chan, Tze, and Yü Chang trees and lives proudly his own master beneath them?" This must have been the Orang Utan from Borneo, or possibly, though improbably, an African chimpanzee.

These are examples, not exceptional, that can be paralleled at least a thousand years earlier or later.

The Assyrians were equally enterprising in epochs quite as remote, and the arrangement of their gardens as shown by the pictures that have come down to us may well have suggested to the Hebrews that the country of the two rivers was the Garden of Eden. The arrival of the crocodiles and hippopotamus in 850 B.C. caused as much excitement in Assyria as did the reception of Obaysch [1] in London in A.D. 1850. They were presents from Egypt. That nation also sought beasts in distant lands, and as her records are the most detailed, and corroborated by European reporters in the most interesting particulars, her lengthy experiences may serve as a picture of the whole.

As is the invariable custom, Egypt's interest in Natural History came with the advent of material prosperity. About 1700 B.C., the horse, a gift of the gods from across the sandy wastes, had enabled her to drive out her oppressors, the Hyskos, or

[1] A Hippopotamus from Obaysch on the White Nile, presented to the London Zoological Society by Abbas Pasha.

Shepherd kings. The horse was sacred to Ammon: and to Ammon Ra, the ram-headed god of fertility, in the capital of Upper Egypt, Thebes of the hundred gates, the first zoological garden was dedicated by Hat-shep-sut, the daughter of Thoutmes I., one of the world's greatest feminists, joint ruler with her father, while he lived, and for the rest of her life an absolute monarch. Her mother was a negress, and to the negro Nehasi she entrusted the five ships that made so glorious and successful a voyage to the land of Punt. This was the El Dorado of the Egyptians, a land of gold and spices on the edge of the world; beyond it lay the Island of the Doubles, "the land of ghosts." Where it was, exactly, no one knows; the large bay just beyond the straits of Babel Mandeb seems the most likely spot, low-lying land away from the highland fastnesses of the Abyssinians. Punt was a land of negroes, and therein lay the astuteness of the royal diplomat in the choice of her ambassador. Force had never been able to subdue them. Hat-shep-sut employed in its stead kindness and courtesy. "I will win the hearts of the Punites to Egypt," was no empty boast, for the humble king and queen (we see her riding on a donkey from the beehive, palm-thatched palace on wooden posts) were confounded by the condescension of the ruler of the world. Most humbly grateful for her gracious presents, they were only too pleased to make their humble offerings in return: great stores of the much-sought incense, and many incense trees; ebony, ivory and

gold, lion skins, and ostrich eggs; curious cattle, live monkeys, dogs, leopards and cheetahs, an ostrich, and a giraffe. All these arrived safely and were duly installed; the incense trees grew and flourished, and the pits in which they were placed to shade the ponds for fish and waterfowl are perfect even now. Then the zoological collection was further strengthened from other sources, as, for example, by the addition of 3300 bulls.

It was kept up, and at certain times extended, during the Golden Age of Egypt. With her decay shows of wild animals died away, to revive, phœnix-like, to greater grandeur, when the Ptolemies became kings of Egypt and united the cults of Apis and Dionysius, joining in one religion the honours due to creatures wild and tame.

Alexander's General, Ptolemy I., was a great naturalist, like his successor; he obtained for the pleasure of his subjects a *Black* Bactrian Camel and a *Black-and-White* Man, but, to his great annoyance, the one frightened them and the other disgusted them. He was also an energetic explorer of the Red Sea, a work continued by his son, Ptolemy II., who was filled with an ardent desire for elephants, founded several cities on the coast Philotera: Myos Hormos or Mussel Harbour, now Kosseir, Berenice of the Troglodytes in the Foul Gulf, which is in the latitude of Assouan, and so called because it is full of reefs, and Ptolemais of the Elephant Hunts near Suakin. Ptolemy III. pushed much farther south, probably to the land of Punt.

Ships had improved greatly in the fourteen hundred years that had passed since the expedition of Hat-shep-sut. Her vessels had carried a sharp prow and a rounded stern, both high out of the water ; the later ships were longer, and keeled, and broad in the beam. The " elephant carriers " were specially constructed with a wide, flat stern that could be run close in to a small pier from which the animals were taken down into the bottom of the ship—one can scarcely call it the hold, for there was practically no deck. The beasts required all the air that could be given, and they remained uncovered, with the exception of light sheets to shield them from the sun. The sultry heat would cause many deaths, and the consequent necessity for speed greatly increased the dangers of navigation. Sailing at night, the mariners could not always avoid the reefs ; vessels of such heavy draught could not be freed with the poles and became total wrecks with the loss of all their cargo.

A successful voyage ended at Berenice, whence a well-appointed road led to Koptos on the Nile. There the animals were reshipped, and travelled down the river to the main elephant park at Memphis.

These elephants were used in State processions and for public executions, trampling to death the Jews and other peoples who refused to worship the country's gods. As war elephants they were a failure.

The ships brought many other animal curiosities, and the known interest of the rulers encouraged their

subjects and foreigners to bring them specimens, so that very many strange beasts, never before seen, became known to the Greeks and Egyptians. The hunters of the Upper Nile, encouraged by the munificence of Ptolemy Philadelphus (Ptolemy II.), set out to catch a serpent for the king. They failed with one of 50 cubits, but succeeded in catching one of 30 cubits (45 feet), by driving it into a hole in which had been placed a net woven of green bulrushes. Entangled therein, it was tied up and carried to Alexandria, where by low feeding it became tame, and was kept as a most wonderful sight for all the strangers that travelled into Ptolemy's kingdom.

The zoological garden formed part of the grounds of the world-famous museum, and its perfection may be gauged by the specimens it supplied to enhance the annual festivals and processions of Apis and Dionysius, one of which in the reign of Ptolemy Philadelphus is described in detail by Callixenus of Rhodes in the fourth book of his *History of Alexandria*.

In the forefront of the procession were Bacchanalian women with snakes in their hands or in their hair, and, following them, a big elephant carrying a statue of Bacchus. Then came :

Five troops of asses with gold or silver trappings.

Twenty-four chariots, each drawn by four elephants.

Sixty chariots drawn by pairs of goats, and twelve by Kulans, the wild asses of Tibet or Mongolia.

Seven chariots drawn by Oryx, or one-horned antelopes, whose horns were sutured—a breeder's trick.

Fifteen chariots drawn by Bubalus, which may have been hartebeests, and eight drawn by pairs of ostriches.

Seven chariots drawn by pairs of Onelaphos or Ass-stags, possibly the Père-David deer of China.

Four chariots drawn by wild asses, and four others drawn by unnamed animals.

Six pairs of camels, three on either side. Camels were a rarity in Egypt.

Cars drawn by mules.

Two thousand four hundred hunting dogs, some Indian, others Hyrcanian and Molossian, and hounds of other breeds also.

After them came one hundred and fifty men carrying trees from which were suspended birds and beasts of every imaginable country and description ; and then were carried a number of cages in which were parrots, peacocks, guinea-fowl, and pheasants, and other Ethiopian birds in great numbers.

And when Callixenus had mentioned many other things and detailed other herds of animals, he continued :

One hundred and thirty Ethiopian sheep, three hundred Arabian, twenty Eubœan, also some white hornless cattle.
Twenty-six pure white cattle from India (Zebus).
Eight pure white cattle from Ethiopia (the bulls of Punt ?).
A large white bear.
Fourteen leopards.
Sixteen panthers (cheetahs ?).
Four lynx (might be lynx or caracal).
Three bear cubs (Arceti, Brown Bear ?).
One giraffe.
One rhinoceros from Ethiopia.

There were many other objects worthy of notice, such as numbers of horses and wild beasts, among them twenty-four very large lions.

The cost of the show was 2239 talents and 50 minæ (£604,000) ; and, says our author, "the fertility of the Nile alone found all this great wealth."

The most remarkable omissions in this wonderful collection are the tiger and hippopotamus ; the most unexpected creature present is the large White Bear. We cannot dismiss the probability that it was a Polar Bear, for the Egyptians had vessels quite capable of weathering the Atlantic and the Northern Seas, much bigger than anything modern Europe put upon the sea before the middle of the nineteenth century. One would not have been surprised to find even American beasts, for there

are Egyptian remains of far earlier date on that continent. Yet, in spite of limitations, this procession remains the largest and most complete show of animals recorded in the history of the world.

5

MONKEYS

IN the Middle Ages monkeys had no tails! They were common in Europe, their habits were understood; they were household pets over the greater part of the Continent, and had been for hundreds of years; they are described in Natural Histories, and pictured there and in other books—always tailless. This impossibility vanishes on a very simple explanation—the whole supply came from North Africa, whence the Moors did a very lucrative business in the Barbary Ape, the animal which is still found in Gibraltar and chances to be tailless.

The long-tailed creatures were suspected already, for they appear as monsters with human heads. By the middle of the sixteenth century the New World was sending its quota, and the simian world was as full and more complete than it had been in earlier days.

The first zoological garden in Egypt, about 1680 B.C., had a full complement of monkeys, which

MAN AND BEAST IN ANCIENT ASSYRIA

i. A votive tablet found at Nippur, showing the results of a successful expedition some 3000 years B.C. (1) Black Ape, (2) Cassowary, (3) Gibbon.

ii. An Assyrian allegory of the establishment of husbandry: man fights the wild beasts for possession of the bull. A drawing probably more than 5000 years old.

From Jastrow's "Bildermappe zur Religion Babyloniens und Assyriens" (Töpelmann, Giessen).

were tame already, for they ran loose on the ship that brought them from Punt. They were found in the Assyrian Gardens; they swarmed in Greece and Rome. Aristotle divides them into apes that are tailless and very like men, but more hairy; monkeys like apes, except that they have tails, and dog-headed monkeys, very big and powerful, with strong dog-like teeth. He says they are otherwise like apes, but forgets their big tails. The comparison suggests that he knew the chimpanzee.

Aristotle's friend and successor, Theophrastus, mentions people who kept monkeys and boasted if they had a Tityrus. What was this? Their picture shows a white-faced, tall, thin, tailless animal. In Rome, monkeys were common during the second Punic War. Under the Empire the number and variety were very large. Trick monkeys were shown on the stage and in the arena. When they were taken round the streets, there were no organs, but a flute would do instead. Frescoed at Pompeii, there is a boy with a Barbary Ape munching a rotten apple. Juvenal speaks of the monkey which, mounted on a shaggy goat, throws a javelin, and again of the dart-dodging ape—evidence of a rather crude and cruel form of humour among the better classes. "Cronius loves a long-tailed monkey as ugly as himself, another favours the matronly ape with wrinkled cheek," said Martial, and to all and sundry the simian made an appeal which did not die when Rome fell and information grew scanty.

In the thirteenth century the Earls of Kildare

took the ape as their crest, with the motto "Crom a boo," because a tame monkey had saved the heir from a fire that broke out in the castle. Is such an act merely fortuitous or mechanical, or is there in it something of thought or affection ?

The monkeys, save for a few and doubtful exceptions, are the only animals that can enjoy a joke. They chase one another in the best of good fellowship, pinch and nip with an air of perfect innocence, and their antics with a stolen bonnet are irresistibly comic in their conscious gravity. A keen sense of humour, if thought be possible, is near akin to honour, and with it love and bravery. Monkeys are of all sorts and sizes ; they are found in the most diverse climates, from the torrid heat of the Tropics to the regions of perpetual snow. Some live in trees, others spend their lives upon the ground. Their food is as varied as their habits. In one thing alone are all monkeys alike, that is, in being more clever than other animals ; in a mixed cage the monkey is always the master.

In the service of man they are capable of the highest training ; in olden days in India they were employed regularly in the gathering of pepper ; to-day, in the film, *Chang*, one of them is seen plucking the cocoa-nut. The following story, on the faith of a Chinaman, A.D. 1610, depicts a monkey militia trained for guerilla warfare.

"Mount Shi-Chu in Fu Tsing abounds with monkeys, which form many groups by hundreds and thousands. While General Tseh-ki-kwang

stationed his troops there against the Japanese buccaneers they used to espy and mimic the soldiers shooting. The General caused several hundreds of them to be caught, fed well, and trained in the use of firearms. At the marauders' arrival he laid an ambush in a hilly dale and commanded the simian warriors to fire on their camp. Scarcely had they been terror-stricken by that earthquaking volley than the hidden soldiers appeared and slew them all."

A little nearer home there was a king of Egypt who taught certain monkeys a song and dance. He clothed the troupe in gay apparel, and they performed with great gravity to the admiration of all beholders, enjoying a long run until, on an evil day, a practical joker threw into their midst a handful of nuts, whereupon they ripped off their clothes and fell incontinent to fighting over the spoil.

This tale is from the pen of an Italian painter. Another Italian of very high renown, the famous Aldrovandus of Bologna, is our authority for stating that doctors learned from monkeys the method of counting the pulse. The next anecdote, which is also the clearest evidence of a thinking mind, has the authority of Pope Julius II.

It was a monkey in his collection which used the cat or, as some said then, a puppy's paw to draw the hot chestnuts from under the fire. Such evidence can only be exceeded by personal experience, and that is not wanting. The writer has had in his collection one monkey that helped a convalescent

friend to climb a tree, and another, more thoughtful and sympathetic, that made a pillow for a sickly fellow, took and laid him down on it and lay alongside, clasping him in his arms to keep him warm. From that to a conscious attempt to rescue from fire or danger is but a step ; an example of the first is six centuries old, and an instance of the second occurred quite recently in Natal where a Chacma baboon attempted the rescue of a wounded youngster under fire. Never was Victoria Cross more richly deserved, says Mr. Fitzsimon, who witnessed the incident. To him the Chacma baboon is almost human. He tells in detail the story of Wilde, the signalman, who had lost both legs in a railway accident and was helped for nine years by a tame baboon that knew each lever as well as his master. One may say, of course, that there is no intelligence, only training and obedience, such as was expected from the monkey pages that were so much the fashion at the Restoration, that Charles's Chancellor thought seriously of taxing them as a means of revenue. That may be so, but the explanation will not fit the fact that the Chacmas know the difference between men and women, and can count. In the Valley of Desolation, near Graaf Reinet in Cape Colony, there is a certain farm and orchard at the foot of a huge Krantz, the home of a numerous troop of Chacma baboons. One day when the farmer and his two sons went to market the baboons came down from the rocks, scaring the women of the household who rushed indoors. This action made the animals

contemptuous of skirts, and, on the next occasion that the men left home, the monkeys raided the farmstead and carried off everything eatable. To circumvent them, the farmer and one son rode away, leaving the other son hidden at home, but the ruse failed ; the Chacmas were not to be drawn. And they were not defeated until the men of the neighbourhood gathered at the farm after dark, when the baboons were asleep, and so had force sufficient to deal with them when they attacked in the morning. That morning three women, dressed as men, rode away, and men in skirts went about the farm, then the monkeys, judging the coast clear, came on their usual raid and were dealt with summarily.

This intelligence is joined to naive simplicity. They are often caught by a gourd baited with corn ; through a small hole left for the purpose they grasp a handful and, clogged with the gourd, are easily caught ; they have not the wit to release their paws by letting go the corn. Troops of monkeys are caught in long, narrow cages, but these must be open at both ends, otherwise the big males would monopolise the food by preventing the approach of the rest. As it is, these go in by the back door while the masters block the front, and the whole flock are trapped by the simultaneous dropping of the doors.

Monkey rule is worthy of study as a very primitive form of government. The animals set scouts, forage in concert, protect one another, and act rather under the command of a number of large males

than of a single tyrant. In captivity this habit is modified, probably on account of the smallness of the troop.

Every cage has its recognised tyrant, self-elected and mentally conscious of his position. There is no better way to bring on a valuable and delicate monkey than to put it where its superiority is unquestioned. On the other hand, a deposed leader will often pine in the midst of plenty. A leader, having eaten sufficient himself, lets the others feed in peace, though a savage one is often very vicious with a subject who tries to take a titbit. And the majority are savage. A benevolent tyrant is a pearl beyond price; one finds them occasionally—big, quiet animals, strong enough to keep the others in order and stop all bullying of the little ones. The bolder spirits are always ready to overthrow the leader's authority, and two, not always of the same race, will often combine to attack him. The other monkeys leave the protagonists to themselves, and the fight, which is full of exciting episodes and reasoned tactics, may finish either way. If the chief be beaten, the whole cage will fall upon him. But the wise keeper will always throw his sword into the scale for a good tyrant, remove one of the enemy, and let the other settle back quickly into obscurity. In this patriarchal government the community is held together by respect for their chief.

A humorous use of this knowledge recently rid an Indian district of a horde of Entellus, the living representatives of Hanuman, the Monkey god who

rescued the wife of Rama from the demon Ravana. These monkeys have black hands and feet. The coat is white, and their long whiskers frame the coal black face with a comical air of blameless innocence that is hardly deserved. The animals are sacred, but the leader of this particular gang was caught by the arm as he reached for a banana in a hole. He was then shaved roughly but thoroughly. Not a whisker was left on his scarred and battered countenance. His disgusted followers respected him no more, and the troop was broken up.

A troop will not tolerate intruders. They are worse than schoolboys in ragging newcomers, and worry them to death unless there are enough to divide their attention. But curiosity is soon satisfied, and then the fresh ones are quickly assimilated. Tribal feeling is so strong that it needs care, and is often dangerous, to remove a monkey from a well-stocked cage. And one can easily credit hunters' tales of dead monkeys being sought out and carried off. The males always perform this work.

Monkeys have not been deified to the same extent as many other beasts, such as the cow, the bear, the snake, or crocodile. The Egyptians worshipped the Hamadryad baboons with their long, solemn faces and thick, grey mantles, making them sacred to Thoth, the god of justice. And the mummied remains show them racked with the diseases that monkeys suffer from to-day. But they were also kept as pets. The sculptures in the temple tombs depict them gathering fruit for their

masters, just as the Langur collects cocoa-nuts now in Malaysia, and, unless the sculptor is indulging himself in a merry conceit, they overcame the dread of fire and carried torches at a banquet. All the East African races were domesticated by the Egyptians. On the monuments of Assyria the monkeys are chiefly Indian. There we become acquainted with the Bhunder or Rhesus, which is portrayed in all its native savagery on the black obelisk of Shalmaneser II., dating from 850 B.C. These monkeys are in a measure sacred, and were quite the most intelligent then known.

The Chacma baboon of South Africa, the cleverest of all outside the apes, was unknown to the ancients, as were all those beautiful monkeys on the west coast of Africa that now form the bulk of our simian supply. Occasional specimens were brought up the coast by the Moors and reached Europe through Barbary in the Middle Ages. The Emperor Charles V. had one such, which he taught to play chess, a long-tailed "Mona." This is the Moorish name, whence "monakin" and "monkey." The Barbary Ape is a short-tailed animal, famous as the only species indigenous to Europe—a small band of about ten still exists on the Rock of Gibraltar, thanks to the care of the garrison and occasional new blood imported across the Straits.

In the late sixteenth and early seventeenth centuries the Barbary Ape was the rage of London. James I. took the French Ambassador to see the bear-baiting and the jack-an-ape on horseback, at

Photo: Payne, Aylesbury

WEST AFRICAN DRILL MONKEY

Reared in the open air at Belle Vue, Manchester.

which they were mightily amused. Shakespeare makes Henry v. boast : " If I might buffet for my love or bound my horse for her favours, I could lay on like a butcher and sit like a jack-an-apes—never off." By the middle of the century, along with dwarfs and parrots, monkeys were indispensable to the train of every lady of fashion in England or France. A ship from Madagascar arrived at Havre loaded with monkeys, which were snapped up in a moment. The sailors called them mangabeys, after a district in that island. Of course, they were not from Madagascar—there are no monkeys on that island—but were probably picked up at Sierra Leone.

As pets the Mangabeys are perhaps the best of the cheaper West African monkeys. The Callithrix, commonly called the Green or Field monkey, and the Mona are prettier but usually vicious ; the curious Patas or Hussar monkey, the White-nosed, the Moustache, and the Diana with its white beard, the prettiest of all, are more amiable but more delicate. For children, except the very delicate Marmoset, the best is the ring-tailed Capuchin or Cebus, whose instinctive use of a stone hammer is an added attraction.

The South American monkeys are kept as pets by the native tribes and are in general very intelligent. The author has found the Cebus the equal of the Chimpanzee in thinking out the problem of getting a distant nut by means of sticks of varying lengths so placed that the shortest had to be used to get the next, and so on, until the fourth was grasped

and the nut swept in by it. The Spider monkeys, larger creatures that use their tails as hands and can turn the knob of a door, are accounted still cleverer. It is these who make the wonderful living bridges for crossing water. The few people who have seen the performance agree on the wonder of it—the long-linked chain, the swing that carries them across the chasm and, most wonderful of all, the early passage of a few strong males that join in lifting the farther end high enough to let the chain swing over clear of the water.

A friend of the writer's saw a similar bridge made over the Prau River in Siam in September 1919 by a species of Langur monkey, but in that case it was for the benefit of three of their number who were too timid to jump the twelve-foot stream.

The Lisbon Zoological Gardens kept a Cebus for eighteen years, far beyond any other record for this small creature. In the Belle Vue collection at Manchester a female Mandrill lived for twenty-six years, but most monkeys died very quickly until open-air treatment worked a revolution. They live for years now, and the new monkey rocks in various gardens are very interesting. Specimens escape sometimes, but they usually return in an hour or so ; and monkey babies, once a rarity, are becoming common. Comparisons of size prove that scores of Rhesus, for instance, are caught when a month old and survive the long sea journey from India. In Britain the best breeding garden is the Scottish Zoological Park, Edinburgh.

6

BIRDS OF THE GODS

BEAUTY is obligatory, but it must be combined with moral or supernatural virtue to gain the adoration of humanity, and few there be that attain the double merit.

The sacred trinity are scattered far upon the world. Asia has one, America the second, the last is the joint possession of Africa and Europe.

The Hoopoe comes a rare but welcome visitor to Britain. The writer saw one once in Durham on a wet and gusty February day and marvelled that a bird so beautiful and withal so fragile could have got so far so soon. It is a sprightly, lively bird, not large, but pleasing to the eye. Its glory lies in the high, circular crest of tawny feathers, white-banded, tipped with black. The long, thin beak marks its mode of life and makes its immortality. It eats insects, small worms, and snails found in quantities in muddy places—and where more muddy and more prolific than the rich borders of the falling Nile, full of the treasures of unknown Africa?

At the top of the rise the bird flocked into Egypt; its advent marked the cutting of the dykes, the inundation of the country, seed-time, and the hope of harvest—the time of gratitude and benevolence among men. And from men it got these attributes and became the symbol of kindness and

devotion. With care it reared its nestlings, and they in turn tended with devoted care their aged parents.

To the Arabs, the succeeding rulers in Egypt, it was the bird of God, yet far away in Norway it became a bird of ill-omen, the Här-fugel, the Bringer of War. The wherefore of this is not lightly to be dismissed; think how often a hot, sunny summer has been marred by serious strikes and tumults, and then wonder whether the warmth that drew the bird so far afield presaged with reason a less welcome visitor.

Everything has a cause, even the seemingly marvellous; the solved riddle often looks supremely simple, and so it is with the most famous of these holy birds—the Bird of Paradise. The Raven is of the same family; how wonderful is Nature, how beneficent the sun that has changed this sombre harbinger of evil to a shape of almost supernatural beauty and made of it *manuk-dewäta*, "birds of the blessed gods," in the minds of the savages of New Guinea. Chance and fraud achieved the miracle that for centuries enthralled the Western world. Indian princes purchased these birds for their beauty and for their heavenly attributes; he who wore them was invulnerable, and as an ancient writer quaintly states, was safe even in the line behind the rear-guard. The Indian swordsmen deck themselves in these plumes when with the king. They are very elegant and spread out like the tail of a cock, but they are all fixed on the thin skin of the

THE BIRD OF PARADISE

Left. As sold for adornment in the Middle Ages, without legs and with fixed wings. From the Natural History of Aldrovandus of Bologna, 1599.

Right. From the drawing by George Rankin in Cassell's *Natural History.*

body for the dealers cut away the flesh. They cut away also the useless legs and the wings that marred the general beauty. This was done for business reasons, but the astute salesmen soon saw the religious advantage and played upon it. They prepared the birds for market with all the old Egyptian skill in the embalmer's art; except the skull, no bones remained, and every aperture was resealed to perfection.

A legless bird—a wingless wonder. To the trade just *burong-mati*, that is, dead birds; to purchasers, *manuk-dewäta*, that became *manucodiata*, *manucodes*—Birds of Paradise.

Their then-known range was extremely limited—a small part of New Guinea and, in particular, the four small Aru Islands. To one of these, Bachian, came Magellan in his journey round the world, and from the king he had, with other presents, two beautiful dead birds. Antonio Pigafetta, who was with him, described them perfectly. "These birds are as large as thrushes; they have a small head and a long beak. Their legs are a *palmo* (*i.e.* three to four inches) in length and as thin as a reed; they have no wings, but in their stead long feathers of various colours like large (penaches), flowing plumes. Their tail is like that of the thrush; all the rest of the feathers, *except the wings*, are of a tawny colour. They never fly except when there is wind. The people told us that these birds come from the terrestrial paradise, and they call them 'bolon diuata,' that is to say, birds of God." He seems to

recognise that the wings had been removed, but that fact was soon forgotten.

In Portugal these "Passaros do Sol" were thought to fly for ever with their faces to the sun, dropping to earth only at the touch of death. Their food was the dew, and they reared their young in a hollow on the back of the cock bird, or in a pouch in the body of the hen. Later, when some birds came winged, it was thought the eggs might hatch beneath them—for these were not ordinary wings that beat, but fixed, open, immovable.

The common people accounted for the legend that the birds flew only in a wind, by saying that they tacked and glided as hawks and gulls were seen to do; their conclusions were ridiculed by the scientists. The wingless fallacy they crushed at once; for five varieties, some winged, reached Europe and had come under their notice. The same examination convinced them that the birds had no legs, so perfectly were the bones removed; they called Pigafetta a liar, and accepted the fact. How could Nature serve so strange a creature and God's ordinance be obeyed—"increase and multiply"? Thus it was argued and logically answered. Aristotle says perpetual motion is impossible, and they are fools who say the contrary. The birds could not fly in their sleep, for if they did their dead bodies would fly for ever. Therefore they come to rest. And if one draws attention to the curious fact that they are legless, this is our reply. God has given them four powers of movement (the wings and

plumes) and, in addition, certain filaments by which they may attach themselves to the branches of the trees.

All this curious fantasy concludes with one sensible remark ; there is no reason why the female should not sit on a nest, and if you say no one has found one, this is our reply, " You have not looked far enough."

Nor had they ; the Bird of Paradise sits very closely, near the ground, in very dense jungle. Only recently have the eggs been found. The hen is a dull-coloured bird rarely seen in company with her mate.

Like the Cock of the Rock and one or two other birds, the males show their sexual rivalries by colour displays amongst themselves. At these *saccaleli*, or dancing parties, the birds are captured. Very early in the morning in some chosen tree, usually the teak, which is provided with an immense head of spreading branches and large but scattered leaves which give a clear space for the birds to play and exhibit their plumes, a dozen to twenty fully decked males assemble, raise their wings, stretch out their necks, and elevate their exquisite plumes, keeping them in continual vibration. The birds are then in a whirl of self-centred animation, oblivious to the hunter who has fixed himself overnight in the tree in a shelter of leaves, oblivious also to the victims who fall stunned by his short-rounded arrow to be picked up and killed undamaged by the boy below, until at last a bird takes alarm and all fly away.

The hunting season extends from April to June while the birds are in their nuptial plumes. Collectors have contrived to take the birds alive in nets. When caught they screech loudly, but this rather attracts others to the spot than frightens them away. Twenty-two different varieties of this wonderful race have been shown in captivity mostly in England. They live well in confinement.

The Bird of Paradise has a strange story, but stranger still is its survival on those small islands.

The crow tribe and all related to it live in pairs, but for thousands of years pursuit has been directed to one sex only of the Birds of Paradise ; the males are now in a great minority and, as Lesson saw, the cock gorgeous in his nuptial plumes, gathers at his call a whole harem of sober-coloured hens. This change in Nature has saved the race from extermination.

The hen, Quetzal (pronounced Kesal), is also of a sombre hue and thus escapes the adoration and persecution that has pursued her mate, the representative of the god of the Quiché in Central America, who, when he made the world, assumed the shape of this glorious bird. It owes no dignity to mutilation, nor has any one been deceived as to its shape. No trader in ancient days could put it on the market—it was a sacred creature reserved to the king. To him there were of right four plumes and to his officers less, according to their degrees.

At Cholula, in the games in honour of the great one, Quetzal-cohuatl—the serpent in the honoured

plumes, the embodiment of wisdom and majesty—the court of the temple was decorated with green branches, garlands of flowers, and arcades of plumes : in the centre were birds, guinea-pigs, and all sorts of curious things denoting plenty and honour. During the sacred dances there came from the temple children winged like butterflies or, like the holy birds, who climbed into the trees and there were shot by the priests with earthen bullets. Akin to the ceremonies of the cave men it was sympathetic magic to aid the hunter who penetrated the pathless thickets of the mountains to get the sacred bird. With a leaf stretched between two fingers he imitates the call, " Whe-oo, whe-oo," softly at first, then louder. If the hen comes, he continues the call, to which she adds her voice until her mate slips silently to her side. What a vision of loveliness ; the small, plump body is plumed in metallic, golden green, the wings are spotted brilliantly red and black. The beak is yellow. The head with its soft, circular crest of silky feathers is a beautiful green, so, too, the throat and chest ; beyond, the feathers turn blood red. To all this beauty must be added the crowning glory : four streaming feathers over three feet long, the tail and tail coverts, whose rich green is powdered heavily with gold—a fitting ornament for a barbaric king.

The hunter takes long and careful aim ; the hard, clay ball kills without bloodshed ; capture is useless, it has always failed.

In ancient days the Quetzal was a sign of pride.

To-day it soars on a higher plane as the symbolic emblem of Guatemala. "To lose liberty is to die."

7

A DAY IN THE ROMAN ARENA

"HELLO, what's this? I expected a lot in your Eternal City, and I have found it. What with baths, libraries, porticoes, and temples, I scarcely thought the world could show such marvels. Already I am quite out of conceit with poor old Londinium." A strong, fair-haired man was speaking—Lucius, the only son of a Roman who had settled, with his native wife, in Britain. Marcus, his friend, a young man about town, had found a pleasurable excitement in showing his country cousin all the sights and introducing to his friends a fellow from the edge of the Empire where bears were much more common than baths; and, truth to tell, some of the young bucks had envied his bloody campaigns against the Scots and Painted men of savage Caledonia.

He had brought up great bales of skins of bear and wolf and beaver, and had just been laying out some of the profits on the wonderful cloth from the Land of Seres when (at the corner of the Street of Delights, where the wealth of the world attracted the millionaires from every clime) a water-colour

picture of gigantic size caught his eye and called forth the exclamation noted above:

"That, my dear fellow, is a lion that is all over a Samnite—just an advertisement of the show in the Flavian to-morrow."

"Oh, we must go; I dare not go home without seeing that. I'll stand the tickets; get a couple of good ones. Never mind the expense."

"Expense no object, old man. This is a free show, with reserved seats; ours are not the best, but they are pretty good, in the Equestrians' block."

"Well, we must get to bed early. I see the thing starts at six in the morning. What an unearthly hour! Our little bear-fights start in the afternoon on half-holidays."

"This is on morning and afternoon if you can last it out, but don't worry about getting up early; we do things quickly in Rome. If you wish to see the whole thing, we shall take a rest this afternoon and walk across to the Prænestine Gate about six o'clock." "Why walk? Surely we can get a chariot." "No chariots for the likes of us before sunset, and we ought to be there before then if we are to see the fun. Take some money and put it in a safe place; the company is numerous and not select. All Suburra let loose, and there are some dark corners in spite of the torches that turn night into day."

A straight, broad road ran from the gate to the great building which was known officially as the

Flavian Amphitheatre, but to every inhabitant of the civilized world it was the Colosseum. First, because it was near the Colossus of Nero; afterwards, and for the better reason, that it was colossal. As they approached, its great walls, 187 feet high, dominated the district. It rose in four tiers of arches, the lowest forming giant gateways through which two loaded waggons could pass with ease. Each had its pair of great iron gates, mostly shut; through the others gangs of slaves were hurrying like ants, each with a box or basket of flowers or greenery. And high above them tiny men were fixing pulleys on what seemed match stalks, but were stout poles that dropped through thick stone corbals into a strong stone cup some twenty feet below the balustrade.

"Those are sailors fixing the Velarium; you will be glad of the shade on a hot May morning. Shall we go inside? It is closed, of course, but Sparthus will be blind. We call them 'buckets,' because fire-fighting is part of their job."

A denarius satisfied the policeman, and in they went, the country cousin expecting to see at once the wondrous arena of which he had heard so much, instead of which they both got lost in the long and gloomy passages, and had finally to follow a slave.

Inside they looked on a great expanse of smooth, red sand about the size of a football ground, but elliptical instead of oblong. A broad stone promenade about seven feet high, pierced by great doors at either end, surrounded the arena, two other

openings smaller, but still important, came up through it in the middle of each side. There were also a few lesser openings, closed by strong, iron-clamped doors. The front was faced with polished marble; there were statues on the promenade of the same material, and about the seats that rose in tiers to a dizzy height to where a black wooden rim crowned all with a frown of darkness. "That is where the slaves sit; they have a shelter from the sun because the sailors must have a deck on which to haul on the ropes. The sails are furled now on the roof; to-morrow they will be run down to these masts that are being fixed round the arena, about ten feet from the Podium wall. You see they are braced to the big tower in the middle and so again on the other side. Strong and simple, is it not? And the posts are a fine support for the wooden barricade that is being fixed to them. Those long, white, curved things? Oh, those are elephants' teeth to hold the gilded nets that keep the lions inside the arena. It wouldn't do for one of them to get a bit of our great Cæsar, and I guess a sailor would use some of his choicest nautical words if a leopard got his calf while he was hauling on a rope." They both laughed at this, but our country cousin stopped quite short and gasped, "Good heavens! an earthquake—the floor's cracking." "Don't worry; they are only having a dress rehearsal for a pond, or to make a mountain covered with age-old oaks. If we hurry we shall see how they grow."

When they reached the Prænestine Gate, the

Briton thought himself once more in his native woods ; great forest trees—oak, ash, and elm, with thousands of lesser bulk—broke the horizon, and from among them there came such sounds of roaring of lions, screaming of hyenas, bleating of sheep, and lowing of cattle as he had never heard. As they hurried on, the wood began to move ; great wains, each with its stout team of oxen, creaked their way down the fine roadway and were swallowed by the gloomy portals of the Colosseum, all now thrown open to a feverish activity.

Many had as load a single tree in all its vernal glory. These passed on to the arena and disappeared down the traps. The carts with smaller trees and shrubs went hither and thither round the edifice and reappeared empty, hastening for another load. Then the drays came, loaded with narrow boxes whence sounded the angry roar of lions, the woof of tigers ; bigger, lighter boxes, they were told, contained the wonderful elk from the frozen North, the rarest beast that ever reached the shows. An open crate carried what looked to be a great fat pig, but the Alexandrines in charge laughed when they called it so. " This is the hippopotamus from the great Nile, a gift of ours, the second city in the Empire. It will not be killed—you may bet on that ; it will find its way to the Sæpta to the tank Augustus built. There are pigs if you want them—plenty." And they turned to a number of boxes with most villainous wild boars champing their sharp, white tusks. " A sure show, always," said Marcus, " and

lucky, too, since the leopards were cleared out and lions are so hard to get. They are nearly as rare as tigers. We have to rely on the three B's for our bloody work—Boars, Bulls, and Bears—but they are not too bad."

A herd of cattle passed at the moment, and Lucius remarked that they did not look very terrible. Quite right ; those and the deer, sheep, and goats are just padding ; they fill up the space a bit and make a nice splashy mess when the lions are let loose. The special brand of fighting bulls will be driven down when things get a bit quieter.

While he was talking, some one yelled to them to take cover ; they had barely time to crush against the side of the houses when a great flock of long-legged birds brushed past them in the utmost confusion.

"Goodness gracious!" said Lucius, "I never saw the like of those things; what are they?" "Just little African Sparrows." "Don't joke ; what are they?" "What I tell you. Sometimes the highbrows call them Struthiones, the 'strutters' ; but it's not a better name, and it is not truer than ours. Everything is wonderful from Africa. Look at these little men—no, I don't mean those fellows in chains, they are the criminals for the lions." "What do you say? Some of them look innocent enough, almost holy." "The worst of the lot, those ; have the audacity to refuse to sacrifice to the godlike Cæsar ; they have had every chance, a set of stubborn pigs ; they deserve all they get,

I say." "They are singing a sad and beautiful song, and are smiling—only their friends are weeping. 'Christus Redemptor.'"

"An ass-headed idiot on a cross. Yah! Yah! the gods of Rome for ever," yelled Marcus. But they heeded him not, save one old greybeard whispering as he passed, "The Lord have mercy on you." "They are stubborn devils," said Marcus, and continued. "Now what was I saying?—oh, I remember. Look at the little men in the cage, Africans again, some with tails, and some like us, without. They are as clever as men, and some of them are better looking." Lucius was very interested in the funny monkeys, and his laughter brought up three very big, almost bestial, men, who guffawed too. One put an arm over Lucius' shoulder to stroke the beasts, then brought it down smartly on his head; another tried to seize his wallet. Luckily, Marcus knew the city mob, his instincts had made him suspicious; and, dashing up, he knocked aside the second man and shouted, "Run! make for the policeman!" which they did. "I wish we could recognise them; they are Cappadocian slaves. Attempted robbery from a citizen, it would mean to the lions at least, perhaps torture as well. We must keep the slaves well in hand."

A troupe of elephants moved past with only two attendants, but they were too shaken to wonder at the sight. "How about a bottle of wine and some music in yonder tavern? Plenty of life and company. You can have anything you care to buy

and all the scandal of the town for nothing." They picked up a few friends also of the Merchant order who were showing the sights to some visitors from the East, and all made their way early to the Colosseum in time to get a good place at a first-floor arch, to watch the arrival of the procession. It was headed by the priests in sacrificial robes. There were elephants, sheep dyed in Tyrian purple, lions with gilded manes, and some fine bulls covered with beautiful cloths.

As they took their seats, the band of the XIIth Legion was playing a hymn to Jupiter in which all joined, while the priests sacrificed at an altar erected in the centre of the arena. The transformation astonished the strangers—the lower promenade (the Podium) was almost empty, and there were many vacant places in the better seats, but 50,000 persons at least crowded the commoner places. High spouting fountains cooled the air, their falling showers made sparkling diamonds by the blaze of sun ; it turned the mist to lovely rainbows; it blinked upon the gilded glory of the Imperial throne and shone upon the satin plumes of strange and gorgeous birds, whose cages hung from every post around the bare expanse of yellow sand.

" What's on to-day ? Programme—programme ! Here, boy," and Lucius held out his hand and got one. The slave did the same.

" He wants his denarius," said Marcus. " The show is free, but the contractor makes a fat living out of programmes."

ITEM No. 1.—*Thessalonians, in a wonderful pole-jumping act over wild bulls.*

A small gate opened, and a bull appeared with burning tow between the horns that drove it almost frantic. As it dashed madly around, a man in red walked into the arena, armed only with a long pole on which he vaulted hither and thither as the bull charged vainly at him. Marcus was quite unmoved, even when the bull seemed to have the man trapped. "The contractor is not such a fool as to lose his slaves," he muttered, "not until he is forced." The beast charged as the man rose, only three feet in front of it, and knocked the pole straight from his hands. The whole audience was tense with excitement that turned into thunders of applause when the performer alighted on the back of the bull. He then slid down and took its tail, allowed himself to be whirled round a few times, released his hold at an opportune moment, recovered the pole, sprang once more over the animal's back, and ran to safety. There were other turns of a similar nature, followed by a whole series of performing dogs, cats, and seals in various parts of the arena, which was too large for all to see a single group of little animals. "What a show; pooh! it's a disgrace to the city. I suppose we shall have the talking horse next," and so it was—a beautiful white horse went through all the usual circus tricks, answered questions with strokes of the hoof for "yes" or "no," nodded to the prettiest lady, and finished with an order to bow

to Cæsar. That was an awful mistake. Cæsar had not arrived, and the crowd roared with laughter at the trainer. But he with ready wit picked out a senator he knew by name and ordered the steed to bow to Cæsar's representative, the most noble Theocritus. "I would rather kick him," said Marcus; "his grandfather was a Greek and a freedman, made his millions profiteering on the army in Bithynia. Pooh, it's a sickly show, and I'm broiling." "Velarium!" he shouted; "Velarium!" yelled a thousand voices, and in response to their cries sheet after sheet of soft-coloured silk floated across the sunlit seats.

The next item was a bull *versus* boar, the latter red dyed, so that the bull attacked at once; the angry pig met it in full charge and ripped a horrid rent in its chest ere the bull got in a toss that laid it lifeless. "That is a better bit, and the next will make you stare."

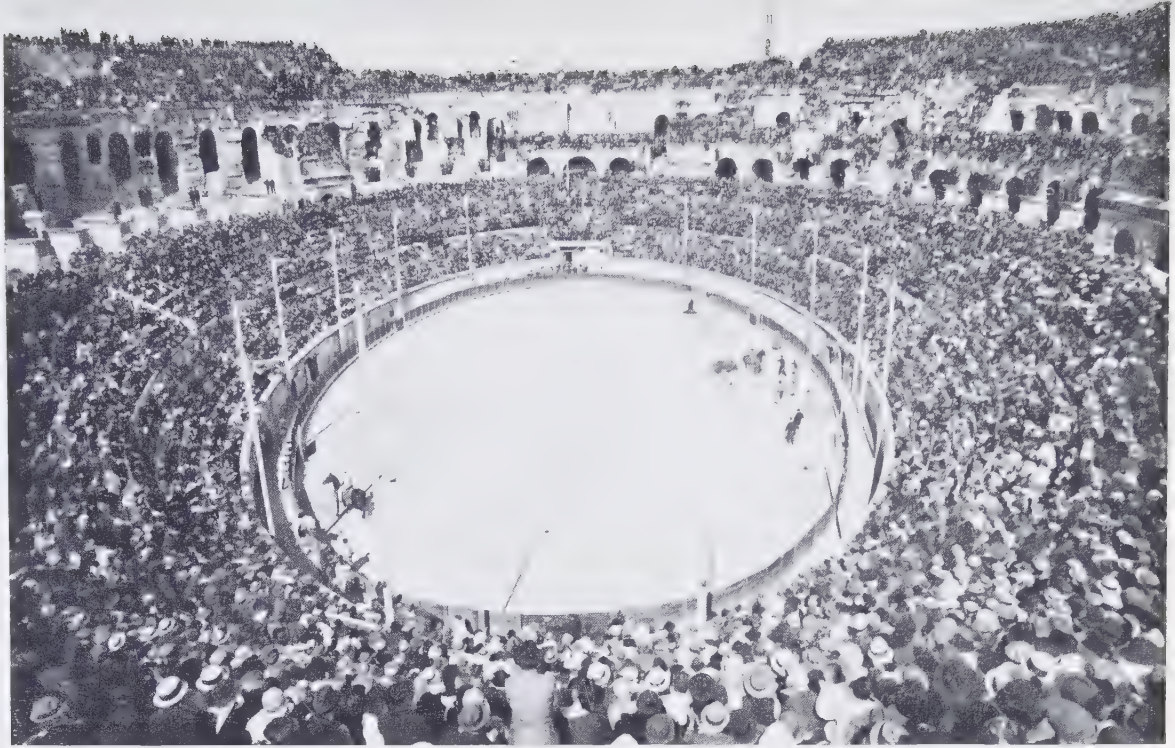
Man with cochlea versus *lion.*

For this the attendants fixed in various places four or five round, upright structures like the swinging doors of an hotel, except that iron bars replaced the solid, circular exterior. They also placed a few upright hurdles—"Which is all to the good," said Marcus. "Now watch." The lion came out of one door, a naked man strolled through another, saw a hurdle and sat upon it apparently interested in nothing but the spectators. The lion crouching, ramping, crawling inch by inch approached its un-

suspecting victim, bunched its limbs and sprang, and as it sprang the man slipped down upon his toes, jumped backwards over the hurdle and ran along it, making faces at his foe. Again it sprang; he dived beneath it, rushed for the cochlea, and entered with the beast only an inch behind; its dash sent the centre spinning, closed the aperture, opened it again, and shut it too quickly for a bite; the performer stopped the turning platform, and from his cage stroked the irate beast; but finding it could not be pacified, he darted from the other side and pulled its tail—and so the game went on with wondrous slides and glides and hairbreadth escapes, all with such show of humour that the crowd honoured his pluck and gave him leave to go.

At this point the Emperor appeared and was received by the huge audience standing, but with not the slightest deference. "Lazy fellow, where were you last night?" yelled Marcus. "Rotten show," said another voice. "What about Julia?" said a third, until Lucius was frightened. His friend laughed at his fears. "Nothing happens—we always let ourselves go in the circus or arena. See, he is laughing, he quite expects it. Anyway, there will be something worth seeing now." The something was a beautiful ballet in the centre of the arena, embodying the story of Europa and the bull, and in its course the maidens and the bull swung up to and were lost in the blue-lit sky.

The mob of ostriches next filled the arena, and



Phot. Bertrand, Nîmes.

A MODERN BULL-FIGHT IN THE ROMAN AMPHITHEATRE AT NÎMES.

their swift, crooked, aimless running caused much amusement.

A retiarius with his net opposed to a wild boar was short and ghastly; the pig was caught fairly in the toils, but left a horrid gash in the poor fellow's stomach. As it tried to gore him, a white-robed man of haughty mien showed himself in the arena, looked at the Emperor and the man. Upon a sign from Cæsar, a company of soldiers entered at the double, drove off the beast, and picked up the mutilated fellow with the utmost tenderness.

There were shouts that it was not fair to the boar. "Little he cares," said Marcus; "he is Gelinus, the most fashionable physician in Rome. That man has a rip where it is wanted, and our friend will keep him alive long enough to see how his inside works."

A tiger released against a weak, defenceless woman was too ghastly for description, but it raised the audience to a fury of excitement and put them on the tiptoe of expectation for the next number on the programme.

To a great fanfare of horns the large gates at either end of the arena were flung open, and four magnificent white horses drew their respective gilded cages round the arena and left them finally on either side in front of the Imperial box. In one was a noble, full-maned lion; the other held a lithe and sinewy tigress. The latter was a shade the smaller beast, and the betting was rather against

her chances, the more so as her owner, Cinna, was not so popular as Sallust.

These two senators had wagered heavily on their pets and agreed to settle it in the arena.

"The tigress will eat him," said the friend from Antioch, who knew more of tigers than the Romans, and he backed his opinion very heavily while the two antagonists bowed to the people and waited the Emperor's order to call out their pets. As they reached the sand a live lamb was dropped from the tower in the centre of the arena. The two savage, hungry beasts went for it in long, low bounds, saw one another, rose in a front embrace, separated with no more than scratches and circled round, each watching for an opening. At this the lion was outmatched; a low crouch, a sudden spring of muscles taut as steel and the tigress is on his neck, has bitten through it, and is tearing the still quivering body.

Her master's calls are useless now, but the timetable must be kept; the soldiery with their levelled pikes close off half the arena and, aided by slaves with seven-stringed whips loaded with hard, clay balls, they press her slowly backward to an exit.

Beyond the line a broad space has sunk, and in this pond a swimming entertainment is in progress, enlivened by gay music. To them comes the fat hippopotamus of yestereven quite comfortable except for the sudden glare of light. A cabbage brings him from his box; he yawns, shows his cavernous mouth and mighty teeth, and shuffles to the water, there to

disport to every one's great pleasure and astonishment. His time is lengthy, the elephants do all their round of tricks, waltz, stand on their hind legs, sit at table, and depart, having saluted on their knees with upraised trunk. There was once a troupe that walked the tight rope, but that is only an ancient memory.

As they go, a wheeled cage full of lions takes their place, and over it a man bound to a pivoted pole swings slowly until he is clutched, drawn down, torn in pieces, and devoured.

The hippo has at length been prodded off. A hush pervades the audience, a group of Christians, sacrilegious felons are turned upon the sand. They come in singing, make no show of fight, but still refuse to throw those few grains of incense on the sacred fire. For them are the most savage lions. A low crouch, a growl, a stiffened tail, one has its victim, and great cries of joy sweep round the crowded seats. Not so the others, starved beyond their strength ; one sneaks to hide beneath the sheltering barricade, another flees round the arena, sees the bright circle on the distant door, springs at it, sets it spinning, slips with it to the sand. It is funny, and the people laugh, but without spirit, mirthlessly, annoyed at their loss of sport. A third looks more hopeful, crouches, ramps with baleful eye, summons its waning powers to a spring, and lands, dying, at its victim's feet. " Hosanna to the Highest," sounds a solemn voice that echoes through the hushed, awed multitude.

The angry Cæsar moves his hand; soon the Christians go to horrid murder in the gloomy vaults, but—change the scene to more excitement or there may be riot.

Everywhere the floor is heaving; around the pond a mountain rises, those green oaks show their verdant heads. Something sticks. What is wrong now? Murmurs of annoyance are buzzing everywhere. A little speck of brown and white is pushed upon the sand, half crouches for a moment, then races in mad terror to the utmost limit. As moved by one spirit the people there rise and swing their togas. The timid gazelle swerves swiftly, and in mad terror dashes to the other end; same action, same result, until, panting and gasping, some door is opened for escape.

"Good old trick," says Marcus; "they always have one ready for a hitch. See, the winches are working now—the trees are upright, every bush in place—the fruit is growing on the trees, and the brooks run purling to the burn. Nice and peaceful, is it not? And there are the woodcutters coming to make timber. I think we may expect some of those savage Caledonian bears to stop their little game."

And so it was. With cries of terror they turned to fight the savage bears rushing on them, rising, striking with outstretched claws. "Real good that bit, Lucius; your British stuff is the best of the day." Elk came on the scene, and Saxons with heavy spears were sent into the arena, but there was

no sport. The bears were driven off, and many of the spectators rose to go.

"Is it finished, then?"

"Not quite, my Lucius; the show indeed is over, but there remains the sop to Cerberus. Look, the whole place is swarming with bulls and boars, sheep and goats and deer; and what you catch is yours. We will leave them to the frowzy mob."

8

THE KING OF BEASTS

THE sun is setting in red and sullen fire, the rumblings of distant thunder roll over the stony veldt on which some little patches of thorny scrub only increase the sense of solitude and desolation. But far away on the eastern horizon the plain is full of life, of herds of antelopes, all moving towards a water-hole, where they will slake their thirst ere darkness falls. It is situated at the foot of a rocky krantz, and as the last rays of day light up the gaunt and rugged cliffs, a troop of zebras approach the spring. Lingering for a while at a little distance they look round with wary, watchful eye, they sniff the breeze for taint of hidden foes, they scan each stone and bush lest it should prove a cover for the lion, then they dash up and slake their thirst. For the lion rarely lies near the water,

knowing from past experience that the game which always comes up wind would scent him long before they came within his power. Elsewhere an ambush is always possible, always to be feared — a rock, a hollow, a tiny bush may mask the coming death. Not twenty yards from the path is a tuft of grass that looks scarce large enough to hide a hare ; behind it crouches a tawny lion with great shaggy mane intently watching, his body is bunched in smallest compass, the strong hind legs are close upon their fellows all tense, the hocks razing the ground, perfect for a spring.

A zebra comes in range, two mighty bounds and the extended claws rip the shoulder, grip the nose, and the chase is over. It is craft, not kingship—the lion is a cat, and hunts like one. Necessity compels him to move with stealth and strive to be unseen—therefore his general gait is low and skulking, the head below the shoulders. Only in menageries does one see that royal pose with head uplifted, then the lion is indeed majestic, and full of honour.

Once when a distant elephant roused his ire the writer saw him thus parading, strong in confidence, defiance gleaming in his deep-set eyes, the embodiment of a proud, remorseless monarch, and thus in the darkness of his native lands he looks upon his enemies. The flashlight photograph has raised the reputation of the lion and endorsed the judgment of the ages.

Dr. Livingstone held this beast in contempt as a mean coward, dangerous perhaps in the pitch

blackness of a tropical storm that blotted everything from view and effectually prevented any hope of a gun firing, but he is almost alone in his opinion. Most lions flee from man, but noteworthy exceptions prove the courage, even the truculence of the beast.

Wolhuter, a game ranger of Uganda, was followed in broad daylight by a pair of lions that rushed at him continually, and only failed to charge because, more brave than they, he would not run. On another occasion, more serious, he was struck from his pony by a lioness and carried off; he saved his life by cutting her throat with his hunting-knife. A colonial acquaintance of the writer lost a friend, picked off his wagon in broad daylight; and the great hunter, Selous, tells how he was rushed by a lion that he had not molested in any way. This, too, was in daylight. Once, under cover of night, six lions made repeated efforts to tear their way into a hut in which he lay, and did not desist until three of them had fallen to his rifle.

The tragic fate of Mr. Grey proves the courage of the animal in its own defence. As one of a party, he was pursuing two lions when both stopped, and the rear one, charging downhill from a hundred yards distance, had seized and mauled him in three seconds. The time was estimated by eye-witnesses, but seems to the writer to be rather too short. The Buffalo Jones troupe of lasso-throwers were never caught by a lioness that charged them several times when they had only the length of the rope, *i.e.*, a few yards

start. She gained for the first twenty yards but never quite reached her quarry.

A cursory search through books of African travel discloses innumerable instances of the boldness and audacity of lions. But no record can equal the gruesome story of the man-eating lions of Tsavo that killed forty Indians and one European, and for two months held up the work on the Uganda railway. They were two almost maneless males; they feared neither man, fire, nor gun. They pressed through every obstacle to get at their victims.

As evening fell they roared in fearful unison: the following deathly silence marked the stalk begun. None could guess where the inevitable blow would fall; they invaded the railway carriages, or, pushing through the fence of thorns, took their victims from beside the blazing fires—one man ensconced in a boiler, and so quite safe from hurt, was attacked with such fury that he was too numbed to shoot.

Luckily, lions rarely become man-eaters, and still more rarely transmit this horrid habit to their cubs. The reason lies in the boldness of the African natives, particularly the Masai, who pursue to the death any lion that dares kill one even of their sheep or goats. Protected by their cowhide shields, and armed with the long spear sharpened to a razor edge, they seek the marauder in his lair. The fight is thrilling in the extreme. The row of ebony warriors full of fire, the lion dashing against the line of shields—clawing them in savage fury—the bold thrust of a courageous friend or the well-

poised spear catching and transfixing the furious beast in mid-air as it leaps upon a crouching foe. These heavy spears are terrible weapons against lions, and the Masai warriors often come unscathed from the encounter—not so the Somalis of the north, whose lighter weapons are less suited to the work—they give the lions a wide berth, and their herds suffer in consequence. A similar fate is now befalling the Masai where rinderpest decimating the herds of antelopes, buffalo, and zebra has turned the lion against his flocks just at the moment that the chiefs have agreed to discourage the lust for war among their men. The domestic flocks are suffering severely, and the lions encouraged by immunity have become to some extent man-eaters, and are transmitting the habit to the young. But with so bold a nation in a country so near to English sportsmen, it can be only a passing and a temporary evil. Lions that fear man are of considerable advantage to a country teeming in wild game that breaks fences and eats up the pasture of domestic cattle, and they are esteemed accordingly. Emin Pasha noted a tribe that took much trouble to release them from game pits, making an easy slope by which they could return to freedom, and Commander Cameron, who crossed Africa in 1876, mentions a village on the shores of Lake Tanganyika whose inhabitants did more, organising special "drums" at whose beat the lions assembled in the village and were fêted with sheep and honey, and went fearless and unfeared among the people!

Valuable as they may be in keeping wild game in check, lions are a terrible scourge when they turn upon domestic flocks and herds. A lion eats about 100 lb. of meat a week in the lazy life of a menagerie; in the wilds he consumes probably double as much, nor is that all. He is no despiser of carrion, and would return to his kill until all was consumed, but if he leaves it, crowds of vultures swarm upon the carcass, and hungry jackals and hyenas prowl around, all eager to snatch a morsel. Soon nothing is left, and he must kill again to find the morrow's meal. It is estimated that such a marauder costs over £8000, and the Roman poet rightly eulogised the Cæsar by whose might the distant Numidians had ceased to fear the lions roaring in the fastnesses of gloomy Atlas.

They were caught in pits with a live kid as bait, or were encircled by Numidians on their swift Arabs, and driven down to a suitable spot; there the Romans took up the hunt and, armed with flaming torches, drove them to the nets, in which they were secured alive; for they were royal beasts whom none might kill even in self-defence.

Even so, the demands of the Roman arena denuded the whole of Africa from Morocco to the sources of the Nile and the vastly more prolific plains of the Asiatic provinces. The old writers are agreed that there the lions were both larger and more numerous. They came even into Europe—they fell upon the baggage camels of Xerxes in Thessaly in 400 B.C., and about the Christian Era Oppian

says they were to be found at the mouth of the Danube.

In Mesopotamia they swarmed in the reed beds of the Euphrates; in the south of Arabia, around Aden, they were so bold that men had to travel in big bands to be safe from their attacks. All these were not enough for Rome, who in the end was forced to seek them beyond her frontiers. India provided an inexhaustible supply: at that time they were more numerous and more honoured than the tiger, and they wrought havoc among the flocks, so that it was a deed of honour to kill a lion, "but it is fourfold more honourable to kill a mouse,"[1] said the priests.

The mild Hindoo saved his honour and his skin by hunting the smaller game, and the lions multiplied and remained paramount for over 1000 years —the favoured quarry of royal hunters. The Firdausi Sâh namah, or Book of Kings, written about A.D. 1570, is full of lions and lion-hunting.

The disappearance of the lion from India is one of Nature's mysteries; the few that remain are preserved as carefully as pheasants.

Why did not Nature adapt his tawny coat to the luxuriant vegetation among which he had lived so long? Why did the tiger, a creature of the north, swarm down upon the sultry plains, and oust the ancient king?

That the striped usurper should grow paramount in Persia one can understand; the lion loves warmth,

[1] No doubt from the damage in granaries.

and though he grew a shaggy coat and the long hairs of the head fell down upon his nose, he was a stunted weakling in the cold north of his range. But wherever found, lions are more intelligent than tigers and of more equal temper. Over vast spaces and a great range of time they are found as pets of kings and nobles—from Ramses the Great of Egypt, whose companion, Anta-m-Nekht, did valiant service against the Hittites, to the King of India's two tame beasts at the foot of the throne. Mark Antony drove a pair in Rome. Caligula had a tame lion which was named Acinaces, the scimitar—so quickly did he cut off men; and Hanno, the Carthaginian general, and, later, the Cid in Spain, had similar dangerous pets. The Persians adopted the Golden Lion as their emblem and kept the animal at Court. The great Baharam v. won the crown by taking it from between two ferocious lions in a test of boldness that no competitor dared emulate; yet for hundreds of years the animals never bred there, a fact that passed into a common saying: "No foal in India, no tabby cat in China, nor lion cubs at Teheran."

This seems to prove that they were born elsewhere, yet there are no records of cubs in Rome nor anywhere in Europe for more than a thousand years, so that their birth was elevated to a divine mystery; the young were supposed to come from the breath of the lioness, and the Florentines who first obtained a litter were vastly surprised at the usual manner of their birth. The religious halo lasted far into the

fifteenth century and made of the beasts an image of the Resurrection.

"For three days they lay dead and were thereafter awakened and called to life by the roaring of the Father."

The writer of the Chronicle was an old and cloistered monk, no doubt ignorant of what was known to many worldly people, as lions were always common, even in the Dark Ages, long before the Kings of England established their menagerie in the Tower of London. The French, always among the boldest followers of risky sports, staged many exciting encounters with the King of Beasts, baiting him with dogs or attacking him boldly unarmed, after the fashion of the most famous Roman beast fighters. The father of Charlemagne, Pepin le Bref —the short and sturdy king—who killed an ox with his fist, went into the arena and killed a lion with his sword. It was in the course of a combat between lions and bears in the days of François I., about 1520, that a young lady dropped her glove into the arena and asked her lover, François de Montgommery, to recover it "to see if he loved her as much as he professed to do." Wrapping his cloak round his arm, with sword in hand he dropped among the beasts, picked up the glove, returned to his charmer, and, so the story goes, threw it in her face.

The fighter unarmed against the lion was usually a professional, but an exciting incident in 1490 proves that an amateur could, upon occasion, show both courage and resource.

On Wednesday of Whit week in that year, a lioness scaled the wall from the king's menagerie in Paris into the next garden. Some men who were there fled at once. A carpenter named Gazeall, hearing the noise, left his house, and, seeing the state of affairs, rushed into the garden just as a second lioness appeared on the wall; her he knocked back incontinently. The other lioness jumped on the wall again; he seized her by the tail, so that she fell on top of him and struck through his thigh. In his peril he kept his head, and as the beast advanced again to the attack with open mouth, he thrust his arm "a good foot and a half" down her throat, gripped her tongue, and held her long enough for the keepers to come and truss her up. The man, badly injured, brought an action for damages, and so one presumes that his evidence was given on oath. He won his cause in spite of the opposing advocate, who suggested that he was the aggressor and had only himself to blame when the animal countered in manner aforesaid.

Such escapes occur in most zoological collections, and were so common and often so disastrous in ancient ones that they produced a proverb: "Do not raise lion cubs in a city." That had about the same meaning as: "Do not nourish a viper in your bosom."

The writer has had, of course, his "lion escape"; it was occasioned by the malevolence of an underkeeper who left the cage door open; the lioness, at large but still enclosed, was frightened by the glare

of the watchman's lamp and jumped through a window to freedom. The head keeper, an old performer of Wombwell's, got her back by taking the cubs to where she lay, and returning with them, was quietly followed by the mother. She was caged without trouble, and no one knew of the incident.

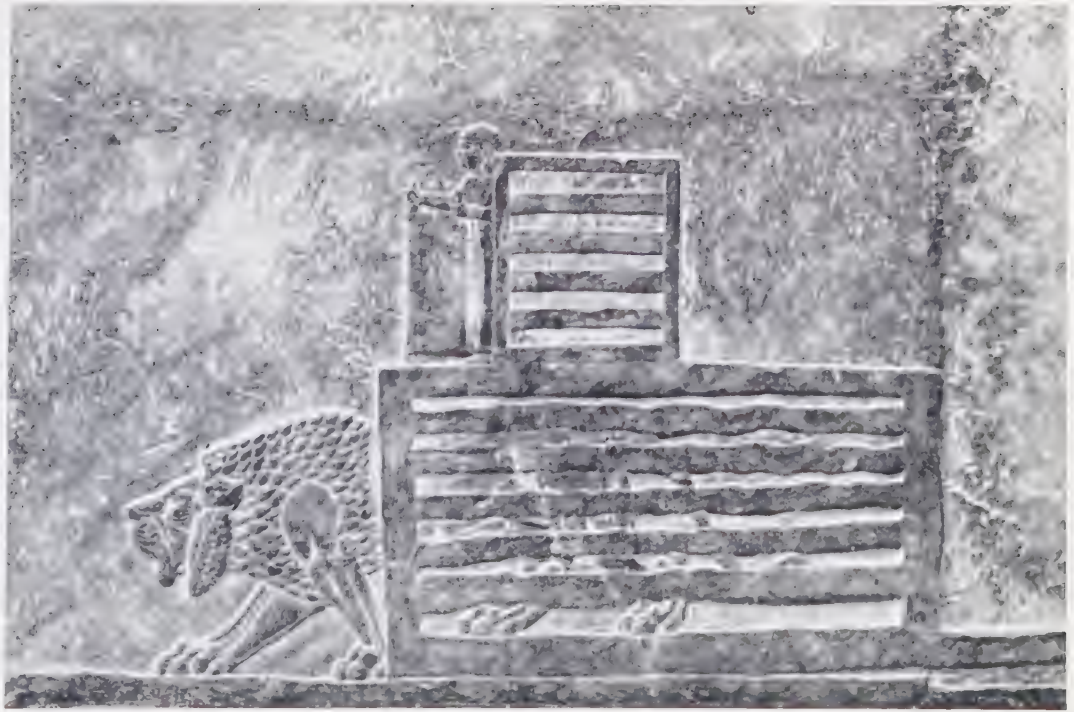
It was quite otherwise with Mr. F. C. Bostock's "Wombwell & Bostock Show," when an escaped lion set all Birmingham on tenterhooks of anxiety.

It was a fine male that got free from his show at the Onion Fair, September 26, 1889. Passing through the showground and scattering the crowd there, it made for the open country, reached Aston Brook, followed its course, and took refuge in a sewer. Many people saw it enter, and the news spread like wildfire. Within an hour, a crowd of many thousands were on the showground, and panic threatened. Something had to be done quickly and quietly. Taking three men into his confidence, Mr. Bostock put an old tame lion behind a movable partition and drove the empty waggon to the mouth of the sewer; the lion-tamer entered the tunnel farther up, with a Great Dane. He shouted and banged a tin, the dog barked, and suddenly two revolver shots were heard in rapid succession. That was the signal; the door of the waggon fell with a bang, the movable partition was pushed slightly, the light canvas screen was drawn from the front of the waggon, and there was the lion. The return to the show was a triumphal procession—with the trainer carried shoulder high; the menagerie was besieged by visitors eager to see

the lion that had been in the sewers. Forty thousand paid for admission, and money was turned away.

The runaway was caught some three days later by some two hundred men and the quiet connivance of the local police. It was an eerie chase in the sewers, with an inglorious end for the lion, caught in a noose hung through a manhole and hauled up like a sack of coal. It died shortly after, and it was better so; the truth would have wrecked the show, and the advertisement was worth a dozen lions. Thus does fickle fortune treat the showman —ruin or affluence hanging on a thought.

Lesser accidents happen often. A good birch broom is the best weapon; the twigs confuse the lion without irritating him to the charging point. The unknown is to animals, as to men, fearful; they hesitate and lose their victim. Coolness in emergency is often defence enough, as a keeper in New York proved quite recently on finding a furious animal in what he thought an empty cage. They met face to face. "Hello, Selim!" said the keeper. It was the usual greeting, therefore all things were as usual; the lion kept on walking. These were wild specimens; the tame have been common throughout the ages. Androcles in A.D. 50 set up as a mendicant with his lion when they were freed from the arena. Apollonius mentions another nearly two hundred years later that was led on a string and fed on honey cakes. Wombwell, almost 1600 years afterwards, had a beast so tame and quiet that boys paid 2d. for a ride astride.



A CAGED LION RELEASED FOR THE HUNT IN ANCIENT ASSYRIA

From a wall-sculpture in the British Museum.

Lions caged with their prey are a strange sight to visitors—less wonderful to naturalists. Lions like company, and a mate once received is fairly safe if it does not engage in a fight for food.

Ancient writers noted that the lion killed only when hungry—they put this magnanimity to his credit, and, aware of his strength and courage, they sought to acquire all these qualities by eating his flesh. Lion, they decided, was the most heating of all flesh—very heavy and difficult to digest and likely to cause griping pains. As a cure for melancholia it is recommended, and for pains in the ears. By its natural heat it draws out poison, and the fat is good for removing warts. Æsculapius, the physician, advised runners (messengers) to rub themselves with lion's dung to frighten the wolves.

Ideas curious and fanciful, perhaps, but not more strange than the modern belief in the power of the human eye. A lion can stare but little shorter than a man; it blinks and stares again, and then acts according to its mood—just goes to sleep, or, if angry, rises in kingly wrath, shoots out a paw, and five big bare claws strike at the puny points of irritation.

9

THE TIGER

THE tiger, swift as an arrow for destruction, mighty in power, ruthless in slaughter, treacherous, pernicious, hateful, harmful, is without a friend. His mate, with one saving grace, devotion to her young, has passed into the world's treasure-house as the symbol of strength, savagery, and solicitude—" To fight like a tigress for her cubs."

The tiger ranges, or has ranged, almost the width of Asia, and most of its depth south of the sandy wastes, and everywhere is feared. Even we, in Britain, picking up the awful sabre tooth where once it did its ghastly work, can scarce repress a shudder.

The wild things know and hate and reprobate the ruthless tyrant and his tyranny. The strong, wild boar, that calls the herd for succour when struck down by the leopard, screams in another note at the fell onslaught of the tiger, squeals out self-sacrifice to save the rest, to bid them flee. The lion kills to live, incurs no hatred, and when well filled instils no fear. The monkeys, safe in the tree-tops, and the screaming pea-fowl, never fail to scold the scourge that slinks beneath their perch.

The tiger has suffered by comparison with the lion ; it lacks the massive head and mane that make the other noble, but between their mates

there is no difference in shape. Thousands of years ago the likeness was observed and noted.

Perhaps the tiger's evil reputation springs from Nature's order, the mode of life : the lion loves the plain and the light of the sun ; the jungle, the thick and tangled shade is the home of the tiger. There life is easier for a ravening beast, pursuit more difficult, and men grow fearful and try to placate the tyrant that they ought to destroy.

In olden days the Indians clad themselves in armour to fight the tiger, but trusted more to pits and poison for its destruction, and rarely followed it to its lair. The man-eating tiger was an ever-present scourge. It is remarkable how few of the lions in that country became man-eaters ; probably they were more easily killed than the tigers, which were often twice their size. Lions were certainly more honoured and less feared. In the Indian mythology the lion springs nobly from the nose of Indra ; the tiger, chief of a host of ignoble beasts, comes from the lower extremity ; but it is from the tiger skin that the new-crowned king defies his enemies, and to him, " the hunter of tigers," the humble people look for help and protection. The tiger hunt was ever the chief pleasure of active and audacious monarchs, and many were the hazardous exploits in which they engaged.

Mujahid Shah, King of the Deccan, on foot, attended by only seven hunters, tracked a man-eating tiger to its lair ; then, advancing before them a few paces, killed it with an arrow that pierced its

heart ; had that failed, he was ready with sword and dagger.

The great Akbar was accustomed to fight them from horseback with bow or matchlock, or the sword. In one such encounter he almost severed the tiger's head ; on another occasion, single-handed, he took a tiger alive ; but he was accustomed to perform miracles, and perhaps the creature was only a cub magnified by his sycophants to the level of his magnificence. A still greater feat was the destruction of two lions that had attacked him in concert ; probably they were lions, possibly tigers, but the uncertainty does not affect the magnitude of his exploit. He just banged their heads together and they fell dead. A friend of the writer in the Indian Civil Service, in a similar manner but with slighter effort, knocked sense into the heads of a couple of quarrelling, obstinate Indian princelings. But such heroes of herculean build were very rare ; the honours of Akbar are shared only by an Amazon, his enemy, the Rani Durgavati of Gadha, who fought against him strenuously and for a while victoriously, and when beaten preferred the tender mercy of her own cold steel to the conqueror's clemency. She was a leader in sport as in war, and would neither eat nor drink while a tiger lived in her neighbourhood ; mounted on her swift Arab and armed with her bow she pursued it until her arrow could wing its way to the marauder's heart. The Indian ladies have a reputation for sloth and seclusion, but there is yet another princess to make our modern

maidens mad with envy of her exploit: the princess, wife of Shah Jehan, who in 1615 slew in one afternoon four tigers with her matchlock, and well deserved the two emerald bracelets given by her delighted lord. She rode on an elephant, the wealthy man's method of tiger-hunting then and now. A drive through the tall grass is impossible without them, and their size is a moderate, but by no means absolute, protection from the enraged tiger. A tiger has been known to take the hunter out of the howdah, and the stories of the furious beasts climbing and clawing up the elephant's flanks, or trunk, and attacking the mahout, or hunter, are too common and too commonplace to mention. One, both humorous and unusual, is perhaps worth repetition; it concerns a quite young Englishman, full of eagerness and ignorance, who set out at hazard hunting tiger. He had no immediate expectation of success when the mahout whispered "Sher bagh" (The tiger), and pointed to a spot three yards away—a tiger was hunting him. He took the golden opportunity, aimed at the abdomen and fired. It is the worst possible shot; no ball is more painful or less crippling; in a moment the tiger was clawing up the elephant's trunk within six inches of the mahout, who had much ado to keep clear of it. The hunter dared not fire, and neither could help the elephant, which, taking matters in its own head, charged a sal tree to crush the gnawing limpet into pulp. The tree was only half rooted on the edge of an old elephant pit; it gave way at

the charge. The mahout slipped off; the others went down pell-mell, and the tiger, shaken off, was kicked into insensibility between the fore and aft feet of the elephant, which then scrambled out of the pit. The mahout remounted; the sportsman gave the *coup de grâce*, and the tiger was borne home in triumph—a great triumph to a worthy elephant. Few of them are so steadfast, especially under suffering; many bolt at the mere smell of tiger, often with fatal results to their riders. As a rule tigers try to escape, only attacking the elephants when wounded and desperate; even so their leaps seem extraordinary, but they are probably correct. Most of the elephants employed are only about eight feet high, and the body stretch of a big tiger is upwards of nine feet. Most of them could reach the howdah from the ground. But that is not the manner of their attack: they leap from the hind feet and alight on the hind feet also, using the claws of the fore paws to maintain their hold. A tigress in the writer's possession that slept on a ledge six feet high always jumped up, neglecting the tree trunk that gave an easier approach, and always alighted on her hind legs with the body bunched.

Such knowledge makes it easier to believe the story of a tiger that took a woman from her spinning-wheel and leapt with the body over a nine-foot palisade. The animals often prowl around the villages at night, but they rarely enter them, as they are very fearful of human beings. But it only needs one experience to kill this fear for ever; then they

become a terrible menace, killing their man twice or thrice a week, spreading terror far and wide, throwing fields out of cultivation, closing a highway as effectually as a force of hostile soldiery. Their capture or slaughter is made more difficult by the superstitious fear of the people. Fayrer tells of an Englishman who set a trap and caught a tiger, only to find the village deserted; every one, including those who had built the trap, had fled from fear of the vengeance of its ghost. Among the Ghonds, the family of a man killed by a tiger are thrown out of caste because, evidently, they have offended a deity. We see the extreme development of this awe in the gruesome tale of the victim, whose half-eaten hand rose to point out to the approaching tiger the hidden hunter.

His post is on a machan, or platform, about twelve feet above the ground, which is generally a safe but uncomfortable seat; for he is devoured by midges which he cannot brush off, as the least move would betray his presence to the tiger and make the weary waiting useless. But there are exceptions to every rule; the tiger does not often climb trees, but can claw its way up for some distance if the occasion arises. Mr. Champion mentions a tiger that attacked his wife in a machan fixed some fifteen feet from the ground, and got so close that she drew back and fell out of the tree, landing luckily unhurt, and safe also from the tiger, which was shot in mid-air by her husband. The same book, *Camera Adventures in Tigerland*, has an instance of the other

side of tiger nature, a quiet beast that lay down and watched two men and a woman who were setting a bait for flashlight photography; their labour was unnecessary. They used their plates there and then on the animal, which appeared slightly bored, and finally fell asleep. And so they left it unharmed and undisturbed. They acted wisely, for the creature was evidently not noxious to human beings, and such animals—and most are of that kind—are very useful in keeping down the plague of wild creatures that eat up pasture.

A tiger is a wonderful "scarecrow," even the village bullocks with their herdsman avoid grass that smells of tiger. A herd of this variety of buffalo is often used to stir a wounded tiger, and, in the time of Akbar, a lowly knight-errant earned undying fame by attacking the beast unarmed on the back of a buffalo, which quickly killed its antagonist.

A similar hairless buffalo is used in the "tiger *versus* buffalo" fights which are a national pastime in Java. The contest takes place on any open space; neither time nor expense is entailed in making the enclosure, which is formed by the bodies and weapons of the spectators. The tigers are brought to the ground in long, narrow, bamboo cages like Gargantuan rat traps, and through the open lattice are prodded to fury before their release upon the buffalo, which defends itself with its horns. The buffalo usually wins, to the great delight of the Javanese, who consider it typical of themselves, just

as the tiger is taken as a type of their Dutch masters.

The Rampoc, or tiger fight waged against men, is a Court ceremonial no doubt developed from the charges and occasional escapes of the tiger in the sort of encounter described above. The royal bodyguard, in four ranks and armed with long pikes, forms a square of fifty yards, in the centre of which the tiger cage is deposited covered with straw. The door is held in place by a rope of equally inflammable material.

The Court being assembled, two officials of high rank walk in sedately to the sound of music, fire the straw, and return equally composedly back to the ranks that open to receive them. Meanwhile, the tiger, maddened by burns and fear, is bounding frantically in the cage until the door falls, when it is sure to leave at once. Outside it may, and often does, hesitate; it looks round for a foe on which to vent its fury, and dashes, as a rule, for the two men whose isolation marks them for attack. It is received on the spears, and not uncommonly is impaled by its own leap and weight.

It may dash, again and again, against the serried ranks before it meets death, or, on very rare occasions, it may avoid the foremost spears and fall mangled and infuriated outside the square, spreading terror among the ladies, who are there watching the fight from their carriages.

This combat is very similar to the severely

practical method used in the Neilgherri Hills of Southern India. When a tiger is marked into one of the isolated clumps of jungle which make the plan feasible, the spot is surrounded with a loosely hung net some nine feet high, behind which the farmers take their stand armed with stout spears. The net is a mere hindrance without stability, and there is an exciting moment when the beast, driven from cover by gongs and fire, makes its dash for liberty, usually uphill; but the men are a hardy and courageous race, and rarely fail to stab the tiger to death while it is entangled in the net. The tigers so far south are smaller animals, probably not much more than half the weight of a good specimen from Bengal or the Terai region of Oude, from which the Indian princes draw the greater part of the fighting beasts that have provided them with sport for many centuries. The arena is some open space among the houses, with the exits blocked by bamboo bars some twelve feet high; the tigers were opposed to elephants as a rule, sometimes they were pitted against another of their own species in a ghastly, gory fight, but they were not matched against lions. The lion may have been deemed too noble for such company, or considered to be no match for this heavier antagonist. In either case the question of supremacy, which still interests the Western world, was neglected in India, where it could have been most easily solved; elsewhere such an encounter must be rare and usually accidental. In the one staged fight in the Roman

arena, probably to settle a bet, a tame tigress made short work of her lion foe.

The tigers for the Roman games were procured much farther west than India, in Armenia or Persia —Hyrcania that lay to the south and south-east of the Caspian Sea, which produced animals as large as those of India, terrible in ferocity, impetuous in attack. Many appeared in the course of years, but they were never shown in great numbers as the lions were, and often they were tame beasts. Lions, too, were oftener tame in later years when they had to be brought from more distant places—a result, no doubt, of long confinement.

The first tiger seen in Europe was given to the City of Athens by King Seleucus, 333 B.C. The next, a tame animal, was given to Augustus Cæsar, 19 B.C., by a party of Indian merchants who had spent three years on their overland journey from India.

This transport difficulty made the animal one of the rarest creatures of Medieval Europe. With the exception possibly of some in the collection of Frederic II. of Sicily, 1254, and one in the menagerie of the Ferrara at Naples in the fifteenth century, the tiger was never exhibited outside the Turkish Empire ; and the learned men of the day, relying on the accounts of old Greek and Roman writers, had the most weird conception of its size, shape, and habits. The Ortus Sanitatis, 1491, pictures it as a sort of striped lizard flying like an arrow, and though its shape was better understood a century later

from the skin, and from the accounts of missionaries and the travels of Marco Polo, its habits were still the subject of surmise and fable. The Ottomans got their tigers from their Armenian dominions and, being devoted lovers of Nature, the Sultans were never without specimens at Constantinople, which were trained for exhibition before the grandees and distinguished foreigners. The beast-masters recognising how dangerous they might be even when under control, provided them with bells that warned the passer-by to give them a wide berth ; Victorius mentions one that was so unruly that it was always dozed with mandrake or opium and moved while dazed and stupefied by the drug.

A couple of tigers gave Abydas, the first Bishop of Babylon, the credit of a miracle. Having escaped from their cage they ran at hazard, tearing whom they met ; " so the people went to the Bishop, who called on the name of God, and the people led back the tigers to their cage." Quite likely, if the people by this time included the animals' keepers.

The discovery of the Cape route to India broke down the Turkish monopoly and introduced tigers to the menageries of the West ; but they have not accepted our climate as well as lions, they are more nervous, they breed less freely, and are always more expensive. A good tiger costs anything from £250 to £300 delivered in England, not an exorbitant price considering the risk and expense of transport, but ludicrously high compared with the first cost of a few pounds. There is a regular market at

Bombay, Calcutta, and Singapore, with fairly stable prices. Up-country auctions are cheaper, but nothing has yet touched the prices at the dispersal of Wajid Ally's stock when, on his deposition, twelve large tigers sold for ten rupees each.

They were the usual show and fighting tigers. The Indian princes had not the courage to train them for hunting as the Tartars did in Siberia, and along the Great Wall of China, whence come the largest tigers, great beasts with thick coats of fur, and stripes often rather brown than black.

From the excellent story of Marco Polo we learn that they were taken to the hunt in carts and loosed against deer, buffalo, and wild asses—and what is more remarkable, they were always accompanied by a small dog whose companionship abated their natural ferocity. This latter fact has all the appearance of a traveller's tale, but Du Halde, writing four centuries later, confirms it when writing of the tigers taken out and released, to be shot by the Chinese Emperors, or their guests, on State occasions.

Marco Polo tells us also of the great increase of tigers occasioned by the wars of Kublai Khan in 1290–1300. So numerous were they, and so desperate from lack of food owing to the dearth of deer and other prey, that merchants had to travel in company, and even so could not have passed the night but for an excellent stratagem. They built fires round their camps, and on them placed lengths of bamboo, whose ends they stopped with clay,

which, exploding at irregular intervals throughout the night, kept the beasts at bay.[1]

Marco Polo was probably wrong about the cause of their attacks, which came rather from familiarity with men than from a dearth of wild creatures; these always increase during the unrest of war. The tiger is a wide forager and, contrary to the usual belief concerning the cat tribe, is an excellent and fearless swimmer. This fact was recognised very early. According to Plutarch, the river Tigris, formerly called Sylax, received its present name because Jupiter in pity sent a tiger to bear the demented Bacchus to the farther bank. Ammianus speaks of tigers swimming the Oxus and Maxera, and of their depredations on the cattle pasturing on the other side. Writers of the Middle Ages speak of the rumour that tigers were accustomed to swim from the mainland to the island of Singapore across an arm of the sea, which was, and is, evidently true, as a friend of the writer was present in Raffles Hotel, Singapore, in January 1902, when a damp tiger was shot under the billiard-table.

The circumstances were dramatic enough to stay in the memory of the young naval officers—they are likely to be Commanders or Admirals now—who were finishing a hectic day on shore with a game of billiards. At a sudden "miaou," rather more sonorous than customary, one of the players exclaiming,

[1] The merchants had unwittingly discovered the power of steam.—EDITOR.

"Cats! Get out!" jabbed his cue at hazard under the table, and looking himself in the same direction saw the tiger.

Of course there was a *sauve qui peut*—the other table was also occupied—the Sikh police were called, and dispatched the still wet animal by a shot through the window.

Tigers are often seen swimming in the Sunderbunds, the mouths of the Ganges in Bengal, and raise their cubs for preference in the quietude of a small island.

The tigress with cubs is dangerous rather from fear than from fierceness; she remains quiet if she feels them to be safe from observation, and many forest guards and others have lost their lives from showing too plainly that they had seen the litter. It is from the cubs that Zoological Gardens are usually stocked, though many other methods—pits, birdlime, and the trap baited with a mirror—have been described, and there is a quaint and ancient story that they may be muddled, mystified, and mastered by a crystal ball that gives them back the ever-active image of a beast as lively and angry as themselves.

Slay the mother and take the cubs is safe but unexciting, bereft of all the throbbing emotion of the rape of olden days—the carrying off of the cubs, the sharp pursuit and imminent danger averted by dropping one, which the mother carried back to the den. Swift as the wind she renewed the hunt, received and carried back her second whelp; woe to

the hunter who could not reach his ship before she caught him on her latest journey. But if he got away she followed on the shore lamenting the lost little ones.

The cubs are wasp-like in and out, they train early to their gory work.

The tiger is always a devil incarnate, a devil worth having on your side in the struggle for existence. Men eat the heart for courage, the fangs and claws are potent charms, love philtres, prophylactics against disease, the evil eye, or magic. The whiskers, too, protect, and what is more, they kill as poison; no Eastern mind withstands the chance to steal them. One of the world's wonders is a whiskered tiger-skin.

10

ZOOLOGICAL COLLECTIONS IN THE MIDDLE AGES

THE arrival of strange rare animals in Paris in the middle of the eighteenth century, created a furore which showed itself in the most extravagant forms. There were hats à la giraffe and hairdressing à la rhinoceros. It was thought that these animals had never been shown in Europe since the arena displays of the Romans. This erroneous idea is still prevalent; actually, rare and

TIGER-SHOOTING IN SIXTEENTH CENTURY INDIA

The tiger has captured a female black buck. Note the hunter's matchlock.
The only illustration of a tiger in the *Firdausi Sâh-Nâmah.*

savage animals were kept in great numbers throughout the darkest and most troubled period of European history; there was always a good collection in some part of the Continent. Lions and leopards were oftenest met with, housed usually in very cramped and insanitary quarters in the lowest chambers of the castle that looked out on the moat. Wealthy princes accommodated their more varied collections in a special courtyard and used them in processions; and baitings of lions, bears, etc., for their own or the general amusement, were comparatively frequent. Itinerant showmen catered for the common people at the fairs, and often made large profits. They exhibited occasionally very rare and expensive animals. The people liked strange things. As Shakespeare says of the English, "They would rather give a shilling to see a painted fish than a dolt to relieve a lame beggar." England was a country of poor people, and her showmen, and indeed her Royal Zoological Gardens, were very poor in comparison with those on the Continent, particularly in Turkey, France, and Italy. In spite of the glamour that shines upon the lions in the Tower of London, she never had even a moderate collection until the navy, paramount in the Napoleonic wars, had left her Mistress of the World. Sir Hans Sloane (1660–1753) frequented St. Bartholomew's Fair to study the strange animals which he could see in no other place.

Our first zoological garden is a very good sample of the collections of animals that were within the power

of the lesser monarchs. "Henry I. enclosed the park at Wudestoc (Woodstock, near Oxford) with a wall, though not for deer but all foreign wild beasts, such as lions, leopards, lynxes, which he procured abroad of other princes, amongst which," says William of Malmesbury, "was a porcupine covered with sharp-pointed quills, which these animals naturally shoot at the dogs that hunt them."

These animals were taken over to Caen to walk in the triumphal procession on the Conquest of Normandy.

The monk, Raoul Tortaire, describing the procession of Henry I. at Caen, adds many animals to the list—a cheetah, a camel, some ostriches, and a baby lion. The ostriches were brought from the south by river transport, probably from Marseilles, which they reached either from Spain or the North African coast. In France they were never very common, but there were flocks of them in some of the wealthy free states of Italy.

Henry's son-in-law, Geoffrey Plantagenet, Count of Anjou, introduced leopards and adopted the three leopards blazon that still adorns our royal coat of arms.

There were no other important beasts in England until 1251, when Henry III. received a Polar bear. This animal was a charge on the citizens of London. The sheriffs allowed 2d., equal to 3s. 4d. a day, for its keeper and keep; it had a collar and muzzle with a thick iron chain, also a long rope to hold it when fishing in the Thames. This was one

of the greatest rarities of the age, but it excited far less interest than the elephant presented by Louis IX. in 1254.

Florence from 1100 had plenty of lions whose success or failure was taken as an omen by the town. A death caused a feeling of sorrow, and births were hailed with joy. Fortunately, the lions were successful and bred freely. There was a surplus for their friends, the Condottieri, and for foreign rulers, to whom they were sent with full instructions on their nature and the best conditions for breeding. These details seem curious in a State paper, but it is interesting to learn that the Florentines considered a very hot cage the most suitable for the purpose. The dens are of this nature in Dublin Zoological Gardens, which are famous for their success in lion-breeding. Transport of these cats is not difficult ; they will live in confined quarters for very lengthy periods, and, as a consequence, we find them all over Europe at all times.

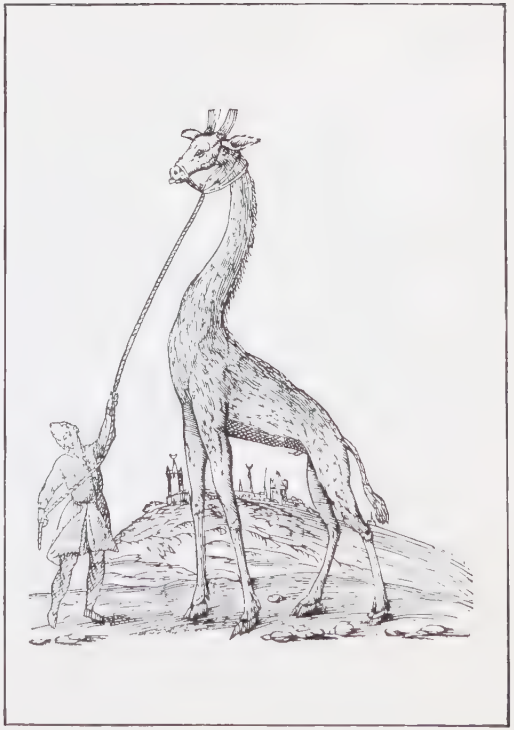
Elephants support changes of temperature very well, and are their own transport, so that it is not surprising that several reached the northern parts of the Continent and occasionally got to England. Almost the earliest belonged to Charlemagne, a gift of Haroun Al Raschid, the famous Caliph of Bagdad. Its name was Abdul Abbas. It was landed at Pisa in 797, in charge of Isaac the Jew, joined the Court at Aix la Chapelle, and went with the Emperor for thirteen years. The famous hunting-horn of Roland was formed from one of its

enormous tusks. These great beasts always made a certain appeal to the populace and thus pandered to the vanity of kings. Antwerp had an elephant in 1483; another, the property of Henry IV. of France, at the end of the next century was much coveted by Queen Elizabeth to the great joy of the French king who gave it to her with every expression of goodwill, heartily glad, as his private papers show, to be rid of such an expensive luxury.

He had a parrot and two or three monkeys and some small birds—a very mean contrast with most of his predecessors and indeed with the wealthier class of ordinary citizens who were passionately fond of pets. Monkeys always commanded a ready sale and provided a considerable revenue to the various cities. They were charged at the Octroi, 4d. (*i.e.* about 5s.) each. As performing animals were exempt from this tax the travelling showmen had to put their charges through their paces at the gates, and the posturing and grimaces that gave them free entry passed into current speech as the expression for false pretence, "Payer en monnaie de Singe," *i.e.* pay in monkey money. But small birds were the great passion and extravagance; they were collected very largely from the north and west of Africa, except, of course, parrots which came from India, and must have been very expensive.

Louis of Orleans, brother of Charles VI., paid fifty golden crowns for a parrakeet, and ten crowns more to the men who brought it from Avignon (A.D. 1402), about £100 in our money. At the

Photo. F. W. Bond]



THE GIRAFFE. *Pages* 102–3.

Right. A giraffe and keeper at Constantinople, from the Natural History of Aldrovandus of Bologna, 1599.

entry of Louis XI. into Paris in A.D. 1461, the bird sellers netted in the whole of the Pont de Change and filled it with 2400 singing birds!

Louis XI. was a failure as a king, and he did not stand at any meanness—even robbing the showmen of their beasts. His mean show was improved later; he bought six elk from Denmark and received gifts from his uncle, Count René of Anjou, who had a wonderful collection at his castles of Aix, Angers, and Tarascon—lions, leopards, elephants, dromedaries, civets, rare monkeys from India, ruminants of all kinds, ostriches, waterfowl, and small birds. He, first, sent collectors to Africa and the Levant, a custom continued by François I., to whose skilled representatives we are indebted for very precise information on the zoological treasures of Cairo and Constantinople, which were much superior to anything in the West.

Charles VIII., A.D. 1484, possessed the greatest rarity that appeared in the Middle Ages—an undoubted chimpanzee; whence it came and from whom is unknown. It was a gift to the king. He and Anne of Bavaria were both interested in Natural History; the princess must not be confounded with the daughter of Louis XI., Anne, who inherited his menagerie, and has left an interesting letter in which she begs Lorenzo the Magnificent to send on to her, as promised, the giraffe which had been presented to him by the Mameluke Sultan Kaytbey. The great duke did not keep his word, The rivalry of the Italian cities and courts, in particular the

Malatesta at Rimini, Duke Hercules of Ferrara, who had a tiger from India, and the city of Naples which had a zebra as well as a giraffe, was too keen for such a handicap. Florence, which had long been famous for lions and lion-breeding (the menagerie was situated in the rear of the *Palazzo Vecchio*, the seat of government), reached, under Lorenzo the Magnificent, the zenith of zoological prosperity, and became pre-eminent in Italy. There were two or more giraffes, lions, tigers, bears, hunting leopards, ostriches, and elephants, which took part with the lions in a triumphal procession. Lorenzo recommenced in a small way the games of the arena, and imitated the animal sports of the Turks from whom he got his best beasts.

To achieve a big success the co-operation of the Mussulmans was indispensable; to them, for example, was due entirely the barbaric splendour of the successor of Frederic Barbarossa—Frederic II., King of Naples and Sicily. A procession, for example, of animals, elephants, camels, dromedaries, tame lions, leopards, and monkeys, all with Saracen attendants, was exhibited at his wedding festivities at Wurms, A.D. 1235. It was he who made the historic exchange of a Polar bear for a giraffe with the Sultan at Cairo.

This was not the first giraffe seen in Europe since the fall of Rome. Constantinople had kept up its animal collection (in A.D. 1202, lions were released against the Crusaders who came against the city), and as was fitting to so powerful a State,

it had received two or three giraffes as presents, not from Africa, but from monarchs of the East. When this last bulwark of Christianity fell before the hordes of Moslems in 1453, it became Constantinople, the capital of a kingdom that embraced half of civilised Europe and stretched through Persia to the confines of China ; it was in touch with the rich animal lands and beast-loving courts of India and Egypt, and in close trade relations with Venice, the mart and shipping centre of western Europe.

The Sultans were passionately fond of animals.

The Turks were a most virile race, fond of manly open-air exercises ; their love of animals showed itself in hawking and hunting as a sport, in the taming of ferocious beasts, and the exhibition of rare and curious animals. Bajazet I., victor at Nicopolis, 1396, in a truly sporting spirit asked only for twelve Iceland falcons as the ransom of Jehan de Nevers —later Jean sans Peur, King of France—and Charles VI. recognised this magnanimity by supplementing the forfeit with other choice hawks, splendid jesses and lures, and hawking gloves richly embroidered and adorned with pearls and precious stones.

Mahomet II., who lost no time in installing his menagerie in the new capital, quartered the beasts in the churches, instead of in the moat round the city, where they had hitherto been kept.

The following detailed but obviously incomplete account of a Sultan's collection is from the pen of

Pierre Belon du Mans, sent to Constantinople in 1546 under the auspices of Cardinal Tournon.

"One sees there," he says, "the ruins of a very ancient palace, called by the populace the Palace of Constantine. The Turk keeps there his elephants and other quiet creatures. The Grand Turk keeps his savage beasts in a venerable church adjoining the Hippodrome, and to each pillar is a lion attached —a thing we never ceased to wonder at, seeing that they loose them and handle them and fasten them when they will, and they even take them sometimes into the city. And from this you must not conclude that the pashas, barbarous as they have been, take no pleasure in seeing strange or rare animals, for each nation under Turkish rule, if it takes a wild animal, sends it to Constantinople, and there the Emperor feeds and keeps it with the utmost care. There were wolves chained, wild asses, hedgehogs, porcupines, bears, lynxes, and onces, which they call lynxes. There are none, even to the smallest beasts such as Ermines, which they do not look to carefully.

"There were also two little things just like cats, except for size, to which we could not put a name. For a time we thought they were lynxes, for we took the 'Onces' for leopards, but we could not decide what they were." (We think they were Servals from Africa, and the Onces were what we call Ounce or Snow-leopard—both new to Europe then, and the latter not to reappear for four hundred years. —*Editor.*)

" It is marvellous how they treat their beasts so gently; they make them quite tame; also the Genets, which they have loose in the house like cats."

This account is condensed, probably because two of his compatriots, Pierre Gilles d'Albi and André Thevet, acting for the King, François I., had visited the city two years before him. Gilles mentions an elephant and a hippopotamus, the latter a very great rarity, only one other specimen, and that in Thrace, having come to our notice. Thevet gives an excellent woodcut of a giraffe with its keepers—two of whom are dragging it on a rough road, while the third belabours it with a stick from behind. This may be intended to represent the manner of transport and the arrival of a new beast. They were led in the same way through the city on festive occasions, such as the rejoicings in 1474 on the circumcision of Mahomet III.

Many other giraffes appear from time to time. Fynes Morrison, a Scotsman, who visited the city in February 1597, found one sharing a compartment of the old Palace of Constantine with an elephant. He tells us: " Elephant is in Turkish ' Philo,' the giraffe, ' Zurnapa,' meaning in Arabic, ' beautiful.' " The lodge was very small, for he had great difficulty in getting out of range of its muzzle and tongue, which he found very distasteful.

Customs have changed very little in three hundred and thirty years; tipping was in vogue—he gave the keeper fifty aspers.

Thevet has a second fine illustration—a beast master with his three assistants taking two large lions through the city. They were held by heavy chains, and carried bells about their necks to warn passers-by, who did not always escape accident. The ambassador of Charles v. of Spain and Austria mentions the matter in his accounts, 1513, thus: "The Sultan sent to our lodgings four elephants and three dancing lions to amuse us, which is considered a great honour. Tip to the keeper, xii. ducats."

Lions, leopards, and other animals were also set to fight among themselves or with rams and bulls, and we learn from the Florentines and Venetians, who avowedly imitated their customs, that the Turks irritated the animals in many ways; men, for example, entered the cage in a frame on wheels, and pricked the beasts between the bars, or through holes pierced in a large ball, or from the interior of a wooden giraffe, large enough to hold twenty men. The Turkish word *serai* (an enclosure), was the accepted name for an animal garden until superseded by "menagerie," derived from French *ménagerie* (stock-yard of farm), in which the illustrious Louis xiv. housed his collection. *Karawan*, or caravan, another Turkish word, describes an ambulant show.

Tavernier, 1603, saw in the valley of the Euphrates "lions like flocks of sheep." These and leopards, both the common and the cheetah, were at hand for the Turks; "Iagale," anglicised jackals, there were in numbers. One variety of lynx came

from Eastern Europe, and another from Persia. This variety, which we call "caracal" (Turkish, *qara quhal* = black-eared), was held in great renown among the Persian nobility for its extreme agility.

We have also to thank Turkey for many peaceful animals. The guinea-fowl, lost since Roman times, reappeared as Jerusalem poultry; the gorgeous Porphyrio, the purple water-hen, well named the Sultana's bird; the Angora goat, a domestic pet but quickly appreciated for its delicate fleece; and the civet (Persian, *Zabad*), whose perfume was so highly esteemed in Western Europe that these small animals have the place of honour in the finest collections.

The Turkish or Mawmet pigeon (its identity long since lost in the name Carrier-Pigeon), beloved first of the Flying and later of the Exhibition Fancier, is a living memorial to the marvellous system of pigeon posts in the Ottoman Empire.

At the end of the fifteenth century there was a new bird from America which, when discovered, had no name. This was no obstacle to its popularity; it had a ready sale when credited to Turkey, the land of novelties and marvels.

In France where the glorious possibilities of Vasco da Gama's discovery were thrilling every mind, the bird was called d'Inde, or Dindon.

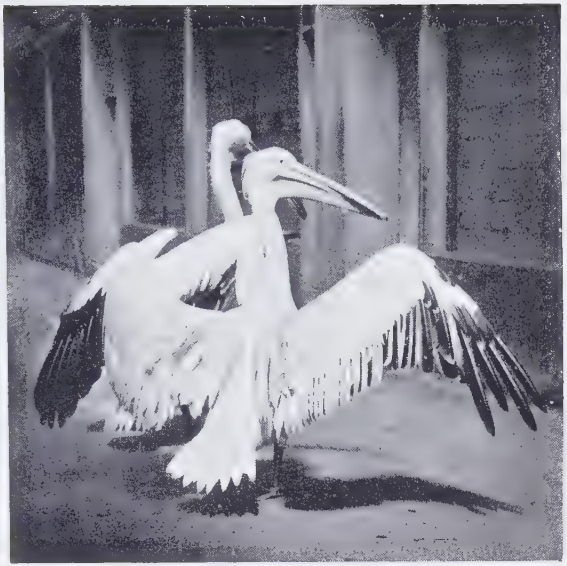
That bird and word mark an epoch in the history of the world. They mark the opening of a free trade route to the Ancient East and the new and more mighty West. Turkey could no longer wax

fat on her 15 per cent. tax on the energies of mankind: her great dominions became a cul-de-sac, the centre shifted to the seaboard of Western Europe; the inflowing wealth of ocean commerce made the great zoological gardens in the west and north finer, more numerous, and more democratic than their predecessors based on the landlocked sea.

11

PELICANS

PELICANS are strikingly handsome birds in nearly all their many varieties, but they never look stately; their short legs and long, broad beak always give them a comical air, even when they sit solemn as a judge, and the bright, round eye adds just that touch of roguishness that makes the perfect clown. And they waddle. They are very alert in spite of appearances and most powerful fliers. Heavy and short-legged, they rise with difficulty and are easily confined by a low fence, but chance may overcome this obstacle; it happened to the writer. A pelican frightened by a sea-lion just cleared the fence of its enclosure; pursuit was immediate but useless. A long, straight path lay in front of the bird—the wings beat, the waddle became a trip, a hop, still longer hops, until some forty yards away it cleared the ground; ascending



THE PELICAN

Right. An illustration from the *Ortus Sanitatis* of Johann von Cube of Mainz, 1491, showing a pelican feeding her young with blood from her own breast.

in a graceful spiral it quickly reached 2000 feet and there sailed back and forth for some two hours, mobbed by a host of starlings and sparrows, with wildly excited twitterings. With that experience one can credit easily the story of the pelican, the mascot of the Emperor Maximilian, that soared so high, it showed no larger than a swallow.

As a wild bird, years earlier, it had come to Mechlin and landed on a rocky point, and there Philip, the Emperor's father, accepting the augury, built his castle. The pelican wandered, tame and fearless, about the building during its erection, and, like a faithful soldier, kept watch and ward on the completed and embattled towers.

Maximilian adopted it, and for fifty-six years it drew a pension of 4d. a day. Where the army went the bird went also, flying as stated, high above the host.

Longevity in birds is often exaggerated; it is true of pelicans, and as there is unlimited food in the warm lands they choose for home, it is not surprising that such strong fliers have established themselves all round the world, within the latitudes suited to their constitutions. They can support much cold weather, but without enjoying it, and as a rule they do not surpass the edges of the Temperate Zones, though Mr. Abel Chapman noted a small party of eight in Jutland, May 13, 1893, and was informed that they were annual visitors. Within their limits their numbers are immense. They live almost exclusively on fish, which they

capture by noisy flapping on the water and a plunge of the beak beneath the surface to gather their bewildered prey. In company they work together, intelligently circling some little bay and driving their food before them into the shallows. There the long beaks plunge into the mass of fishes until the great pouch is filled to distension. Then, labouring under the heavy burthen, they fly off to some rock to swallow it at leisure. The resourceful Chinese, who has turned the cormorant to his service, has contrived also to make the pelican disgorge for his advantage.

From the same capacious storehouse the young take their food, the supply being regulated by a judicious pressure of the sack against the chest, and an equally careful closing of the beak from time to time. The tip is bright red in colour, and seems a spot of blood upon the breast. Is this the origin of the wonderful fable that has made the pelican the model of maternal devotion? And is it cause or consequent of other tales as strange? The pelican builds far from the haunts of men, on low, rocky islets, or on some mud flat on the wild wastes that stretch beside the sea—the wilderness of ooze and water, not of burning sands. What wondrous legends have been woven round this simple oversight. These young sea-birds reared far off in the burning desert—the mud-lined nest that became a bath, and a stew filled with water and fishes by maternal solicitude, and was turned by Providence into a well of life for thirsty pilgrims.

This in Mohammedan lands. In our own country, and with about as much good reason, the pelican crying in the wilderness has become a commonplace for solitude. This sociable bird is made the figure of sadness and desolation, from the wrong reading of a passage in the Psalms: "By reason of the voice of my groaning my bones cleave to my skin. I am like a pelican of the wilderness: I am like an owl of the desert" (Ps. cii. 5, 6).

What does it mean? Nothing beyond the fact that the writer was very sick; he vomited like the two typical birds of the desert and the sea. The owl rejects the skins of its victims in small balls—"pellets." The pelican gives up fish to its young—vomits them forth—and so gets its name in Hebrew (*Kaath*), and still more expressively Kik or Hakik: a small, unlikely germ to grow into such sanctity as the bird enjoyed for centuries—a pattern of devotion and a symbol of the Church. The Egyptian fable of Horus ordering the vulture to save its young by flesh torn from its thigh may have suggested the story of the pelican tearing open its breast to feed the nestlings; and from that the story grew into a parable of the Resurrection and Redemption. The young peck at her, she pecks them to death; but, relenting, after three days revives them with blood sprinkled from her breast. And when the fowlers came to take the young by setting the nest afire she fought for them, beating the flames until her wings were scorched and she fell helpless, as the fanning helped the flames.

The latter part of the story was borrowed from pagan beliefs. Ancient Egypt accepted the devotion and smiled at the maternal madness that fanned a flame to extinguish a fire, and for that reason the pelican in Egyptian hieroglyphics is the sign for madness and imprudence.

The fellaheen in the Middle Ages took and ate the bird, saying that it strove not from piety but stupidity; the priests refused the meat because the bird was sacred; Europeans for the more prosaic reason that it tasted fishy.

Such are the strange stories of religion—matched by the beliefs of naturalists. That the pelican should be considered a dweller in arid wastes is comprehensible, but how came sane and sober man to say "it drinks but twice a year," and "it sleeps with the bill held upright to protect itself from hawks"?

12

THE OSTRICH

THE usual is mentally invisible, and abnormalities of familiar objects such as the fowls and ducks in the farmyard, the pea-fowl in my lord's garden, or the rapid loss of fear and flight in the wood pigeons that haunt the London parks, pass unnoticed through the ages. The ostrich, which

is in effect but one of a very large genus of birds that inhabited the southern continent when the world's great land masses ran East and West, came into the ken of civilised men as a unique monster noted by all classes. They were astonished at its size, mystified by its structure, and incapable of deciding whether to place it among the birds, or, more naturally in keeping with its great feet and strong, unfeathered legs, to add it to the hoofed beasts. This is no foible of the ancients merely; the heresy, for such it is, endured as late as Buffon at the end of the eighteenth century.

This towering bird, by far the largest of the many species of running birds, such as the Cassowary, Emu, Nandou, Kiwi, that are still in existence, is puny compared with the gigantic Moa which stood about twelve feet high. It disappeared about five hundred years ago, hunted and exterminated by the Maoris, who then turned to cannibalism to satisfy their desire for animal food. The Æpyornis, which was about the same size, disappeared from Madagascar some thousand years earlier, leaving to us one of the most cherished of the Arabian Nights entertainments. The eggs of these birds were enormous. The ostrich lays a large egg (a fine one is $17\frac{1}{2}$ inches and $15\frac{1}{2}$ inches over the point and round the middle respectively—in content approximately as much as forty hens' eggs), but it is as nothing compared to that of the Æpyornis, which measured thirty-six and thirty inches. The Arab traders compared it with the egg that produces the eagle,

a bird that can carry a lamb in fact, and a sheep in theory. They evolved from the comparison the legend of the giant bird of prey, the Roc, immortalised in the adventures of Sinbad the Sailor.

The ostriches of Asia were not so large. The Tchang, ten feet high, is mentioned in the journey of Hiouen-thsang to India in A.D. 648. It lived in a valley of the Pamirs near the lake Sir i Kol. Its eggs were the size of small jugs. They are gone now, and so are the ostriches of Mesopotamia that were chased with such glee by the soldiers of Xenophon, and those in Palestine that were hunted on horseback, as they are still in Central Africa.

"What time she lifteth up herself on high, she scorneth the horse and his rider" (Job xxxix. 18). This is exactly true; head extended, tail uplifted, the wings opened to catch the fronting breeze, the bird seems to skim away on the tips of the strong toes in lusty twenty-foot strides that leave the fastest rider far behind. The Arabs, in a troop, sometimes run it down by steady and constant movement, wearying the bird to exhaustion as men catch wild horses in America; but this is a mere diversion to test the stamina of themselves and their much-prized steeds.

The hard hunt is shorter and more exciting, and would be doomed to failure were it not for the unaccountable instinct of the bird to run in circles—a fact well known to hunters and to the wild Hunting Dog; both cut across the chord of the course, save time and energy, and get their reward.

When dead beat, the ostrich lies with head stretched limply on the sand, the flimsy and only basis for the old idea that, covering his head, he thinks his body is hidden.

If one leg were stronger than the other the run would be explained, but this is not the case. The writer has watched them often when chased or at play. Their course is a series of corkscrew bends of equal size and strength, that terminates in a final swing, circling towards the starting-point. Probably it is an inborn dodging instinct to avoid the close pursuit of beasts of prey. The other running birds have not this habit, but they differ from the ostrich in several curious and important particulars. In them the sexes are alike in plumage of sober hue ; the hens are usually as large or larger than their mates, and the males take entire charge of incubation. They also have sole control of the chicks—the only point they have in common with the ostrich. The hen ostrich is drab ; the cock, a larger bird, is conspicuous in brilliant black and white. In the writer's opinion this is a unique example of race protection by attractive coloration that leads to attack on the male bird by foes that are thereby diverted from the females and chicks.

The other running birds are confined to countries with no predatory beasts that cannot be repelled by their terrific kicks. The ostrich alone had no obstacle to northern extension, and no protecting barrier from the large carnivora. The ostrich alone

has met the lion, and natural selection has adapted it to meet this special foe.

The strain of egg production would sufficiently account for the maintenance of a large type of hen bird and relief from the duties of hatching and rearing. The hen ostrich differs little in this respect from the others, for she only sits during the day-time, and then only on cold or cloudy days when the sun's heat is insufficient to maintain a hatching temperature. She sits with her head stretched low along the ground, from which she is with difficulty distinguished. At this time, or when he has covered the eggs with sand for solar incubation, the cock is near, upstanding, conspicuous in glossy black and white, a mark for every lion in the neighbourhood. They stalk him, as he expects. His upraised head, some nine feet high, gives early warning of the approaching foe. He shams lameness, flutters, stumbles, the lion dashes forward; a few strides and another stumble, the lion is turned from the nest, bounds along after the ostrich, running with many twists and curves until, judging all safe, he quickly outdistances his pursuer. By the same feint he protects his speckled chicks, which, at the cluck of danger, lie flat and lost on the sand and stones. When he broods at night his colours are invisible in the darkness, or simulate to perfection the light patches and deep black shadows of the African moonlight. His booming call is another protection; it imitates so well the lasting notes of a lion's roar.

[*Photo: F. W. Bond*

THE OSTRICH

Inset: An ancient Assyrian driving ostriches in Mesopotamia.

From Jastrow's "Bildermappe zur Religion Babyloniens und Assyriens" (Töpelmann, Giessen).

From lesser enemies they are comparatively immune, though hyenas, jackals, and pigs destroy a certain number of eggs when the nest is unguarded; and vultures, carrying stones into the air above the nest, drop them to break the eggs that they may gorge on the contents. This traveller's tale is quoted by the Rev. J. W. Wood and confirmed by the similar evidence of naturalists as reliable as Mr. Sclater and Major Stevenson Hamilton, and we see no reason not to believe it, as many birds go a long way in the same direction—for example, the eagle that dropped a tortoise on to the head of Æschylus, and the sparrows that steal walnuts in the market at Dresden and drop them on the pavement to get at the kernel. The Hottentots, approaching from leeward, drag the eggs from the nest with a crooked stick. The Bushmen (disguising themselves in an ostrich skin) shoot the bird with poisoned arrows; if they are attacked they only need to run to windward, and the human taint scares the enemy immediately. The birds are taken alive in running nooses set in their tracks. A large number are always required for export. An ostrich was one of the first animals of the Roman games, and one of the most numerous exhibits in the shows of the Decline. Commodus showed hundreds, shooting off their necks with crescent-headed arrows. (It was remarked that they continued to run for a long time; ducks will do the same in the same condition.) Since the days of Rome ostriches have been usual zoological specimens, and their capture and collec-

tion was no doubt much as at present. They are stupid, panicky birds, but capable of friendship with more staid and amenable creatures. In this connection Herr Hagenbeck tells an interesting story. He had collected a large flock, and nothing remained but the difficult work of putting them on board ship at Suez. Each bird was in charge of two men, Carl Hagenbeck and his brother leading. One of the ostriches became restive and broke from those who were holding it. Mr. Hagenbeck went to help, but too late; and his brother, being unable to hold their bird alone, it too escaped, and shortly the whole flock was once more wild and free.

Mohammed, his foreman, stolidly proceeded to mount his camel, and to the irritated question, "Where are you going?" replied, "For the ostriches." He left the yard, driving before him the goats of the caravan, and in an hour returned with the full complement of ostriches, a result that evoked a characteristic reflection of the famous dealer, "Every man to his job."

The eggs of the ostrich, rhea, and kiwi are white, those of the emu and cassowary dark to vivid green, the moa's light green. The period of incubation differs considerably—thirty-one days for the rhea, forty-two for the ostrich, and for the emu no less than sixty-two. During the sitting neither rheas nor emus eat even if food be placed near them. Both are excellent with their chicks, but the ostrich is rather a clumsy father. Ostriches will eat lizards, but the whole race is almost vegetarian, with a

decided preference for weeds, and can pick up most of their food if allowed to range. No care avails to keep them many months in a confined space. They require liberty, room to run and jump and display the bowings and springs and curvets that make their courtship ; the tripping, mincing gait of the ostrich advancing with fluttering plumes and head uplifted, and the final fall to his knees with white wings outspread to her he woos is a sight to see. With space, even the ostrich and cassowary will live for years in our climate.

Hagenbeck maintained that the mountains of Scotland would be ideal for ostriches, but this seems rather an exuberant hope. The writer found Manchester's winters too much for them, though they did not refuse cover. Kept in a good house, with daily outings, they throve. The cold shock was a tonic ; a bird confined because of bitter weather, and sinking fast, was revived in twenty minutes of a February day, and is living now.

The rheas and emus will thrive through the bitterest weather ; the writer has seen them like a mound covered with snow, and has noted the ring of feathers torn out when they rose from the frozen ground. Rheas often breed in England. Emus have hatched and reared their brood in Scotland in the depth of the bitterest winter (1881) known to our generation.

These birds are all easily tamed, and are often kept in a semi-domestic state in their homeland. French enthusiasts see in them a welcome addition

to our barnyard stock, but their flesh cannot compare in flavour with that of chicken; the eggs are too large to be used with advantage, and the feathers, except of the rhea, are valueless. Even those are only comparable with the clippings of the hen ostrich. The magnificent wing and tail feathers of the males make that race remunerative, though the hen's feathers and the glossy black plumes on the cock bird's body have considerable value. The ostrich has no downy undergrowth like other birds; its sides are kept warm by the wing feathers. Nature has made them long and supple, deprived them of that stiff texture required for flight, leaving instead their chiefest glory—broad, silky filaments springing in equal lengths from their central shaft.

Feathers have always been prominent in the adornment of man, but none have had a vogue comparable to that of the ostrich plumes. They nodded in the head-dress of Pharaoh, emblems of the even scale of justice; they fanned the flies from Assyrian monarchs; they adorned the helmet of Athenian Lamachus, some 1800 years before our Prince of Wales took them in conquered heritage from the blind King of Bohemia. Found only on slaughtered birds and carried long distances over dangerous paths, they bore then a price commensurate with their beauty. In 1859 a chance brood in the Zoological Garden at Algiers suggested the possibility of domestication. In 1866 there were less than one hundred tame ostriches in

Cape Colony; to-day the trade is annually worth £1,000,000.

At the Cape the birds roam over vast areas, often in company with cattle and sheep, and the business is generally profitable. There are numerous establishments in North Africa and Europe, for the most part failures, where the birds are penned in small enclosures. Hagenbeck has an ostrich farm at Hamburg, where he claims that the feathers grow longer and more silky because of the cold; but the procedure is everywhere the same. The eggs are collected and hatched in incubators, the young birds are kept in separate enclosures. At four years the feathers begin to be marketable; the ostrich, driven into a wedge-shaped corner, is blindfolded (with a stocking), and the plumes are snipped off at the roots or plucked.

With the extension of the industry prices have fallen heavily; feathers bring barely a tithe of their former price, and 'Liza Ann, the lucky member of a "Feather Club," may lord it with the ladies of the Court.

13

THE CAMEL

ON the camel, Nature has concentrated her curiosities. Scarcely one of its features follows the naturally normal, scarcely one of its

habits is habitual to other animals. Its mental outlook is extraordinary; even its habitations are extraordinarily varied — in place, climate, and physical conditions.

Whence it came is shrouded in doubt. The earliest prehistoric remains are found in the most unlikely spot—Mexico—a land separated by vast oceans from its present dwelling-places.

Then it was a huge but humpless creature, and as such passed south of Panama to degenerate into the race of llamas of every kind—small, hard-hoofed, surefooted animals, camel-like in action and in habits, differing but little structurally from camels, though in appearance so very different. Like the camel they are docile in the mass, following one another without guidance and without guides on narrow paths alongside great abysses, and in comparison with their size they bear an equal burden; they are useful, too, as food, for milk, and raiment. Among the Indians of the Andes, wealth is counted in llamas as elsewhere in camels. They are so important in the national economy that the mating season is a national festival; but along with these enormous flocks of tame beasts there still exist, and have always been, great numbers of wild animals, whereas the wild camel cannot be traced with certainty to any place or at any time even in the remote past; not even on the continent from which they sprang, although there are great deserts close to their place of origin—deserts in which they have lived and thriven when abandoned as they were by

man after the American Civil War in 1865. That the camel should revert successfully to a feral state in a dry country is less remarkable than that it ceased to exist as a wild creature; but they have adapted themselves equally well to conditions that would appear impossible, so contrary are they to our opinion of their structure, habits, and constitution. In 1829 a number of camels were introduced into Southern Spain to be used as beasts of burden. The project failed, chiefly because of the great fear their smell and shape inspired in horses, and they were abandoned, turned loose on the Marisma on the shore of the Atlantic and the banks of the Guadalquiver. On this muddy, desolate tract of country, which is flooded for long periods every year, the camels multiplied and waxed fat. There are many wild camels in Spain now, and they would remain triumphant over adverse Nature, but man, the poacher, is killing them off, and all efforts to protect them in great reservations have failed to compensate for the loss of liberty. Africa, arid deserts, shifting sands, and a scorching sun, is symbolised in the camel, yet contradictory as ever, that continent received it almost the last.

Into most of Northern Africa it was introduced by the Goths and Vandals as late as the sixth century. It was unused by Egypt in her day of glory. There is but one small reference (Ex. ix. 3) in our Holy Scriptures, and there it occurs perhaps by careless writing. By a Hebrew enumerating flocks and herds it would be written automatically. The

camel had been the mainstay of those Bedouin tribes of Palestine and Arabia for many centuries, but even they cannot carry its history as far back as the camel caravans that travelled from Pekin through frost and snow to Turkestan fifteen hundred years before the Christian era. These were one-humped camels such as the Bedouins used, and this variety reached Assyria as spoils from those tribes. The sign for camel embodies that denoting ass, thus proving that they were not to be found wild in the country, a fact confirmed by their absence from the hunting pictures. The two-humped or Bactrian camel, now almost peculiar to Asia, came from the north ; how it got there is unknown, but the excitement aroused by its first appearance as tribute to Shalmaneser from King Shona of Gilzan (near Lake Van) in 859 B.C., and the merriment at the seven comical creatures, proves the novelty of an animal destined to become very important in peace and war in its new home.

The first were very lean, poor creatures, but good food and attention soon increased their size and stamina. Their bulk struck the Romans with astonishment when they saw them during the war against Mithradates ; the beasts of to-day are still greater and more shaggy, able to withstand the deep snow and intense cold of the high plateaux which the tea caravans from China must pass on the journey to Russia. Development has been aided by the severe conditions and the certainty of death in failure. The camel has a living storeroom

[*Australian Commonwealth Photos*

CASSOWARY AND EMUS

in its hump or humps—a reservoir in the body. Those that can store the largest reserves survive.

The hump of the camel, a fatty excrescence quite unconnected with the backbone, originated in the luxuriant pasture sometimes obtainable in the oases, and would soon perpetuate itself as a food reserve by the survival of the best furnished individuals when driven into the sandy wastes, where alone they could avoid their enemies. A camel, underfed, absorbs its fat until the hump hangs limp upon the back; the legs and flank next give way, and the camel sinks and dies. If food be found it recovers slowly, the hump last of all. An Arab, proposing a long journey, is as solicitous of his camel's hump as he is careful in training the camel for the big drink. On the lower side of the large intestine are a series of rubber-like cells, thirty or forty in number, shaped not unlike a round tobacco pouch. A cell distended will hold three gallons of water, but when they are all filled together each holds far short of this amount. Habitually the camel makes but little use of this reserve. Contrary as usual to preconceived opinions, it is not abstemious, but a heavy and a regular drinker; it is said to prefer muddy water, but this our experience leads us to doubt; nor is it sober when chance permits it to imbibe the date's fermented juice.

When under preparation for a journey, the camel is watered at ever-increasing intervals until it can go five or six days fasting. Then, at the moment of departure, a draught is given mixed with salt;

this induces heavy drinking, which fills the cells to their utmost capacity. In the Camel Corps, six days is the official limit of endurance—a considerable advance on the four days mentioned by Aristotle. The Arabs occasionally make their camels go nine days without water. At present this is cruel, though it may become normal in the future. Thus fortified, a baggage camel will carry about 700 lb. at 2½ miles per hour—say, 150 miles in six days.[1] A running camel will carry a man with his water-skin and food about 500 miles in the same length of time. A running camel, called dromedary by the Greeks, will do from 100 to 120 miles per day on occasion.

These racing camels are so predominantly of the one-humped variety that many people think that the dromedary is an animal of a race distinct from the two-humped Bactrian, but there are speedy camels among the two-humped race. The Chinese name them *Tong-Kye-Fo*, *i.e.* camel with the feet of the wind. Actually they are both camels, and a dromedary may be nothing more than a poor creature of the plough. The racing camels, technically known as Delouls, are allowed to run free with their dams for a year. On their birthday—according to the Rev. J. G. Wood—their master, turning them towards Canopus, boxed their ears, and with the solemn order, "Henceforth thou shalt drink no

[1] A heavy camel will carry 1000 lb. for a short distance, and they are often overloaded to avoid octroi duty, which is calculated per load.

milk," these Lathim (*i.e.* ears boxed) began their training. A round peg sharpened at both ends and thrust into the nostril, hurting both calf and dam in sucking, weaned them very quickly; fed on barley and rough, dry food, and exercised hard, they grew up muscular, gaunt, and lean, ugly to the eye, but capable of great effort and of long-sustained fatigue. When they gallop, the hind-legs are thrown outside of and beyond the forelegs, but their usual pace is a long trot of seven or eight miles an hour. The ladies of the harem travel by twos on camels, in panniers, wherein they recline at length, the whole covered with a shell-shaped hood. The master rides on a wooden-pommelled saddle made of coarse canvas thickly stuffed with wool and tightly girthed, to prevent galling. From it hangs his equipment—the water-skin from which he drinks without dismounting, the bag for the camel's wool, which comes off in great tufts, and the tent. On these he rests his feet. The English have contrived stirrups from a leather saddle fitting round the hump, which is only covered with webbed cloth. The Camel Corps carries all its equipment hooked to the saddles. A momentary halt and the ship is cleared for action. The men are armed with rifles for reconnaissance work or lances for the charge. A sergeant in the Corps told the writer that they were faster than cavalry, thus confirming Aristotle's description. They keep step and line without bits; they are guided by cords from the headstall, passing through a ring in a martingale

between the forelegs, and the head must be pulled hard down for a halt. The work is so racking that enlistment is only for three years for a native and twelve months for our troops. The officers ride Arab horses. The camel advances near and off side alternately, inducing a nausea that gives it an excellent claim to the title "ship of the desert." The motion, too, is very irregular. General Gordon thus described camel-riding to a young lady gushing about the glories of scouring the desert: "Seat yourself on a round music-stool, screwed out to its fullest extent and firmly fixed to the floor of a light, springless cart drawn by a spirited horse, and drive hard for an hour over dusty ploughed land under a blazing sun, and you will have a tolerable idea of camel-riding."

The camel runs with his neck in a graceful curve, unless he is thirsty and smells water, or is deceived by a mirage, or sees the dread sirocco approaching. Then, with neck outstretched, he rushes for the water, or runs to lie with all the caravan in a circle prone until the storm has passed. Caravans travel in single file, each camel fastened to the preceding saddle; a leader sings to keep them happy and to quicken the march. At night they form a circle. The loads are taken off, and the beasts, hobbled by a foreleg, are turned to graze. They are not robust animals, but their horny palate can crush the camel thorn with its sharp two-inch spikes, and so they thrive where other beasts would starve. But, like the thistle-eating donkey, they prefer better food,

and, if permitted, will gorge on grass. This seems to be their *natural food*. So clean a feeder should make good beef; but, though a ruminant, it has not a divided hoof, and is therefore unclean to the Hebrews.

No feast is more popular among the Arabs. On the annual pilgrimage to Mecca it is almost raised to the solemnity of a Holy Communion, when the noble creature that has borne beneath a silken tent the sacred Koran is solemnly sacrificed at the happy termination of the journey, and its flesh, cut into a myriad morsels, is distributed among the Faithful.

It has something of that sanctity which surrounds Mahomet's mount, which went with him to Paradise.

Its noble carriage and unalterable gait straight to the goal had been an inspiration all through the difficult journey—unreasonable, perhaps, what else was to be expected from the finest beast marching unladen? and marching straight forward is a camel's characteristic and congenital stupidity. No obstruction is allowed to bar its passage, every man or thing must clear away or run the risk of being crushed against the wall in narrow streets; and in the country, a chance bit of green turning it from the road leaves it an absent-minded wanderer, far from the caravan, a gift to the finder. It will work to the death, but without affection for a master or hope of reward, and from him it gets no other appreciation than its commercial value indicates; should it fall ill or become useless, he turns it loose to wander to an awful death.

Camels breed every two years; the little ones are as undemonstrative and almost as sedate as their elders. If born on a journey, they are carried until the evening halt; the next day they can follow their dams.

To accustom them to kneel and carry, their legs are tied at night and weights are put on their backs. The lesson is soon learnt, and does not need repetition.

Camels rise back and then front in four motions, just the contrary of the horse or elephant. They kneel for loading, and are so often in that position that the callosities on the chest and legs that take the shock of the fall have become natural and are present at birth. Their load is sometimes excessive, but their querulous squeal is not so much a protest as a habit, like biting and spitting. The last straw may break their back; the first is certain to raise a complaint. Usually it comes to nothing; the loaded animal once on its legs moves off without a murmur. But they are very dangerous when angry from injustice, or affected by sex rivalry in the spring. This is the season of camel-fights—repulsive spectacles once common in the East and still occurring by accident or design. The camels rush at one another open-mouthed, tearing great strips of flesh from neck and shoulders and trying to disable with a fearful bite on the flank. Then, backing away, they rise on the hind-legs to strike with terrific effect with their sharp toes. The contest soon ends with the death of one of the combatants.

Vicious, stubborn, independent, stupid, the camel,

blessed with endurance and adaptability, is in the front rank of the world's benefactors, the pride of the rich, the wealth of the poor man. A worker in every sphere, good to ride, or drive, or plough, it laboured through the long life of states that have perished ; it carried the pioneers of kingdoms yet to come. With its help Africa and much of Asia has been saved from barbarism ; America has benefited from its aid ; the last of the camel riders is scarcely gone who helped Australia. Strong before sails were known, camels have survived through the age of steam to that of petrol, of whirling chariots closed in steel, of death descending from the heavens above —and are they impotent ? Read of Lawrence, his Arabs and his camels. Think and ponder !

14

THE HIPPOPOTAMUS

AS most of our information on Natural History comes from European sources, the descriptions of the hippopotamus were wondrously vague until the end of the eighteenth century. The great beast was common enough in Egypt and well known to that ancient race, but few of the many Greeks who travelled there had seen it out of the water. Consequently all of them, misled by the high-sounding

title, Horse of the Great River (*i.e.* the Nile), err in describing its feet.

Diodorus Siculus makes them cow-like, but gives an otherwise excellent description of a young specimen about eight feet long. "On each side of the mouth are three teeth bigger than the tusks of the wild boar. The body is very like that of the elephant. The skin is very hard and strong, more so, perhaps, than that of any other animal. It is amphibious, spending the day in the water, where it moves and acts exactly as if it were on the land, to which it comes at night to feed on the herbage.

"If it were more prolific, it would cause great damage to cultivated crops. A hunt necessitates a large number of men who try to pierce the hippopotamus with iron-headed javelins. They attack it from several rafts joined together, throwing into it harpoons, many of them serrated or barbed, to some of which ropes are fastened; and they leave the animal to struggle until it grows weak with loss of blood. The flesh is very hard and difficult of digestion." Aristotle gives the hippopotamus a mane like a horse and the tail of a pig, and makes it neigh. Other ancient writers say it is to be found in Indian rivers, confusing it in all probability with the dolphin. The most interesting of the ancient stories comes in a letter from Alexander the Great to Aristotle "that the hippopotami had dragged down a number of his soldiers as they were swimming across a river."

BACTRIAN CAMELS IN THE SNOWS OF MONGOLIA. *Chapter* 13

From Carl Hagenbeck's "Von Tieren und Menschen" (Paul List, Leipzig).

Commentators consider that this must be a mistake for crocodiles—and probably it is, if the accident happened in India—but elsewhere the hippopotamus may well be intended. These beasts are not carnivorous, but they are very truculent when unafraid, and very prone to attack any object that floats over their preserves, so much so, that early explorers were often obliged to shoot a number to keep the rest at a distance.

"One sank, and the rest cleared out, which was a very desirable result, since they often hog up underneath a canoe in deep water and heave it right out, capsizing all the occupants. The canoes bore marks of the tusks of these brutes, who look upon them as intruders and often attack them wantonly."—*Across Africa* (Cameron).

A French officer, ignorant both of its name and nature, in a letter from Loango, August 20, 1767, describes a persistently humorous hippopotamus: "I must tell you of a funny fellow that we have just killed. The beast is bigger than a carriage horse, and had made his quarters in the bay for over two years. His head is enormous; he has no horns, but a muzzle like a lion. . . . He is amphibious, a good swimmer, and always under water. He only eats grass, and his little joke was smashing small boats and canoes; when he had got everybody into the water, he was content. Away he went without hurting any one. But as he was rather a nuisance, we had to get rid of him; no easy job—guns were no use, his eye caught the glow of the slow match,

and he was down in a moment. Being very bold and familiar he came too close, and some one hit him on the nose with an axe, and after that he smashed every little boat in the bay. . . . At last five of us lay in wait on his track and got him with slugs; we found him dead next day in a neighbouring pool. I took two of the big teeth which were a foot long and as thick as my fist."

These enormous sickle-shaped canine teeth, which have been known to exceed two feet in abnormal specimens, may be used for cutting the weeds, but more probably are highly developed defensive weapons. Hippopotami are by no means good-tempered animals, and would be as dangerous in captivity as the elephant or rhinoceros were they more agile on land.

Unlike the elephant and rhinoceros, which charge and also kneel upon their victims, the hippopotamus only bites; but there are few males that do not carry the scars of their fierce love-fights through life. At liberty their mating appears to be permanent, but it gives great trouble in captivity. Unless they are brought together at an opportune moment, a pair will fight until, with teeth broken and skins lacerated, exhaustion compels them to give up the contest. The stout hide, from which thongs have been cut and kourbash (whips of hippo hide) made for unnumbered centuries, is hard enough to turn a smooth-bore bullet; but, as in the never-ending struggle between guns and armour, the teeth have grown equal to the task of piercing it, and, in doing

so, they have surpassed in hardness all other ivory. In addition, they are of an immaculate and permanent whiteness, which renders them extremely valuable to the manufacturer of false teeth and pianoforte keys. The early Dutch settlers obtained about 25s. per lb. for this ivory, which, on account of transport difficulties, was far more valuable than the hide or the ton of excellent fat they could collect. A ton of fat is comprehensible, when we consider the animal is huge, and so prone to the adipose that it was said to practise blood-letting on itself by cutting a vein against a rock or sharp thorn, afterwards stopping the flow of blood by rolling in the mud.

The price of ivory remained high until dentists adopted another material for the manufacture of false teeth.

Sir Samuel Baker affirmed that the hide made excellent turtle soup, and no doubt so strong a material has other uses. The shipmasters of olden days employed it in making rudders, topsails, and topsail yards—rendering them safe from the lightning's flash. Probably it is a good non-conductor. How strange if it should chance to come into the service of our most recent and novel discovery from information thus supplied two thousand years ago!

The flesh, except a little of the liver, which he could dispose of to the gourmets of Cape Town, was useless to the hunter, and only collected crocodiles, waiting until decomposition should help their strong

teeth to a meal. The hunt had neither risk nor sport. Twenty shots by eye or ear gave as many carcasses, but, to the natives seeking the flesh for food the chase was so full of difficulties and dangers that they usually resorted to snares and traps—generally a hole dug on the route to or from the water, and covered with brushwood; or a heavily weighted spear set with a trip catch above their usual path. Another plan was to catch or drive a number of hippopotami into a steep-banked pool. The ancient Egyptians used more sporting methods. The interior wall of Edfu is given up to the mural representation of a regal hippo hunt. The court sculptor represented importance by size, and the king made fast to a hippo is ludicrously like a very tall lady in a very wide-brimmed hat (and unusually short skirts) leading a particularly small pug down Bond Street; but the hippo is very well drawn, and the whole series of pictures is very interesting. The king is shown finding the animal walking on the river bed, and in pursuit with a harpoon and raft. This was a dangerous business. The raft was of papyrus stems turned up forward to make a prow, and quite incapable of hasty retreat from danger. The harpoon was thrown from a loose socket, and a float of papyrus attached by a cord enabled the hunter to find his wounded quarry in the rank vegetation. Some hunters are shown with three or four such lines. The king is also shown catching the beast in a net. This must have been very difficult, but a net is used for capturing the young

either on the land, where the mother leaves them to sleep, or perhaps in shallow water.

Some say the young are born on land, but Guy Fawkes was certainly born in the tank at London, November 5, 1872, and the same thing has happened at Amsterdam. In any case the mother, who is full of tender solicitude, soon takes the little one to the water, protects it from the crocodiles, with which there is an armed neutrality, and teaches it to swim. It always rides on her neck, thus being last immersed and first to rise, and when with it the mother keeps to the shallow water. Small hippopotami are as playful as kittens, rolling about in the water, playing with floating things, or practising every kind of splash.

From the height of experience we can smile upon the precautions taken in acclimatising the first hippo that reached Western Europe. This was Obaysch, the gift of Abbas, Pasha of Egypt, to the London Zoo in 1850. Herds of camels were requisitioned for milk and transport to Cairo. Special accommodation was provided on the steamer, and a special train took the animal to London. Now the railway companies put them in an open truck, and they do just as well. Obaysch, where the animal was taken in 1849, is an island on the White Nile. To-day there are no hippopotami nearer than Fashoda. In 1600 they were common at Alexandria, where Francesco Zerenghi caught a pair in a pitfall near the Nile. He took the skins and bones to Rome, where they were mounted by an ignorant

taxidermist, whose efforts misled scientific Europe for more than two centuries.

This need not have happened, as Zerenghi took very careful measurements of the female, which was 12 feet long and 4 feet 8 inches in height. The male was one-third larger. This accords very well with the biggest—12 feet 3 inches—killed by Sir Samuel Baker. Bruce swore that he had seen hippopotami 20 feet long in Abyssinia; the Hamburg specimen—4 feet 1 inch high—is the largest known in captivity.

"The Egyptians," says Zerenghi, "call it 'Foras Flebar,' or sea-horse," so it must have gone into the Mediterranean, as it is known to go into the sea both off the west and south of Africa.

The Boers call the hippo "lake-cow," and so did the ancient Egyptians. Its call is certainly more a bellow than a hinny, and it is hard to imagine that a people so artistic as the Greeks should name it "river-horse" for such a slender reason. In the writer's opinion the animal's majestic rise and fall as it plunged through the waves recalled the prancing steed and made the name. The ancient Egyptian name, "p-ehe-mau" (literally, water-ox), may be the origin of behemoth, in Hebrew "great beast." Did the animal, already extinct in India, flourish in Palestine in Biblical times? The description below is too true and too close to have been gathered from hearsay:

15 Behold now the water-ox (Behemoth) which I made with thee: he eateth grass like an ox.

16 Lo now, his strength is in his loins, and his vigour is in the muscles of his body.

17 He moveth his tail like a cedar : the sinews of his stones are wrapped together.

18 His bones are pipes of copper ; his bones are like bars of iron.

19 He is the chief of the ways of God ; he that made him can alone reach his sword (*Sickle or Scimitar*).

20 Surely the mountains bring him forth food, where all the beasts of the field play.

21 He lieth under the shady trees, in the covert of the reed and fens.

22 The shady trees cover him with their shadow ; the willows of the brook compass him about.

23 Behold, should a river overflow, he hasteth not ; he feels secure should Jordan burst forth up to his mouth.

24 He taketh *all* in with his eyes ; his nose pierceth through snares.

These verses from Job xl., as given in the Jewish or English Bible, certainly refer to the hippopotamus ; *to which hippopotamus* is by no means certain. Verses 20, 21, 22 are far more accurately descriptive of the recently discovered or rediscovered Pigmy Hippopotamus (*Hippopotamus liberiensis*) from West Africa, which roams through the forests and rarely uses the same track twice ; a very shallow stream in which it will scrape out a mud bath is sufficient for its requirements. Like all new beasts, it was reputed to be exceedingly savage and untamable. It was captured alive in 1912, and is now found in several zoological gardens, but there is every probability that it was known much earlier. In the lithographic record of the famous journey to the land of Punt, about 1680 B.C., a small slab is devoted to a hippopotamus that must have been of a novel kind. The river that flowed by the Garden of

Ammon, at Thebes, teemed with the ordinary variety.

And Constantinople, which possessed many of these, certainly had one of the pigmy variety. Whence it came is not stated, only that it was a gift to the Sultan. The description of Bellonius leaves no doubt on the matter. "Its head was ludicrously small compared with the body, it had no horns (big canines and incisors—*Editor*), the ears were short, half rounded like a bear's. The feet were like those of a crocodile and very short, only four inches from the ground. The tail like that of a tortoise."

The hippopotamus is fast disappearing from most of the old haunts—he will survive, but as the protected relic of a bygone age confined in some small pools in the centre of that Africa in whose rivers he once ruled supreme. How great the fall since the daily journey (twixt land and water) made him the type of time: his inroads on the green and growing crops recalled the spring and the ruthless havoc made *Ta hourt*, "the great one," power incarnate. The herding instinct, shocking all morality, added unfairly shameless wickedness.

Then he was worshipped by many to appease his wrath, and feared by all as the awful judge and dread destroyer, crunching the wicked at the bottom of a watery hell—a devil striking fire from hard-tempered teeth. Is he still to some a fetish—or just a fat pig penned to amuse the careless crowd ?

THE RE-DISCOVERED PIGMY HIPPOPOTAMUS

15

THE RHINOCEROS

FOR a century or more the rhinoceros market has been very steady, with demand exceeding supply, and prices tending to stiffen. Good quality Indian are quoted round about one thousand guineas, which may be taken as the highest average price for zoological specimens for exhibition purposes. Elephants occasionally fetch higher prices, owing to their money-earning power; and certain of the rarer monkeys are possibly dearer, in view of their shorter expectation of life; and the giraffe, which fluctuates largely, has been on certain occasions in the same category. The African two-horned rhinoceros, which is a more startling creature than its one-horned cousin and is much more rarely offered for sale, is quoted as a rule at rather more than 600 guineas, at which figure it is by far the more expensive as, for some reason as yet undiscovered, its longevity is barely half that of the Indian beast. These big, bulky, rather stupid creatures are still fairly numerous in their native haunts, their destruction by modern firearms having been checked in the nick of time by the general adoption of Game Laws and the formation of Game Reserves.

To quote an example, the square-mouthed or White Rhinoceros of South Africa, had been reduced to thirty specimens before it was protected,

in a reserve of 75,000 acres in Zululand, and even that poor remnant is subject to illicit persecution.

In 1927 two men were each fined £120 for this big poaching—which is reminiscent of these humorous reflections of a Scotch marauder which appeared in *Punch* on an earlier and similar occasion :

I've poached a pickle pairtricks when the leaves were turnin' sere,
I've poached a twa-three hares an' groose, an' mebbe whiles a deer,
But ou, it seems an unco thing an' jist a wee mysterious
Hoo any mortal could contrive tae poach a rhinocerious.

I've crackit wi' the keeper, pockets packed wi' pheasants' eggs,
An' a ten-pun' saumon hangin' doun in baith my trouser legs,
But eh, I doot effects wud be a wee thing deleterious
Gin ye shuld stow intil yer breeks a brace o' rhinocerious.

I mind hoo me an' Wullie shot a Royal in Braemar
An' brocht him doun tae Athol by the licht o' mune an' star,
An' eh, Sirs! but the canny beast contrived tae fash an' weary us—
Yet staigs maun be but bairn's play by a weel-grown rhinocerious.

I thocht I kent o' poachin' jist as muckle's ither men,
But there is still a twa-three things I doot I dinna ken,
An' noo I canna rest, my brain is growin' that deleerious,
Tae win awa' tae Africa an' poach a rhinocerious.

Fortunately, another supply has been found on the west bank of the White Nile, separated only by this deep stream from the Ketloa (Prehensile-lipped or Black Rhinoceros). The boundary must mark a great natural cleavage thousands of years old, of which the White Rhinoceros held the western side in undisputed sovereignty. This beast, whose remains are found in the London clay, has a longer neck than the Ketloa, and much longer horns—the record length is over five feet—from which the "kerries"[1] are made that have been so often the

[1] Walking-sticks and symbols of sovereignty.

cause of wars between the Kafir tribes. And there is a remarkable contrast in the instinct of maternal care ; they let the calf run in advance, guided by a touch of the mother's horn, whereas across the river the little ones always follow their dams. In colour, curiously enough, they are alike—a dirty khaki.

They differ slightly in temper—the black is a lively, often truculent beast, weighing round about two tons ; the white, some few hundred pounds heavier, is generally a placid brute, but it was this usually inoffensive creature that made a murderous attack on W. Cotton Oswell.

He had fired one barrel, and expected it to make off, instead of which it stopped, walked calmly towards him, and drove its horn through his thigh and the horse he rode, tossing the mount and rider into the air. Oswell had a scalp wound four inches square from his stirrup-iron that put him out of action for half a year.

In spite of this, he continues, " My after-rider came up with another gun. I half pulled him from his pony, and mounting it, caught and killed the rhinoceros."

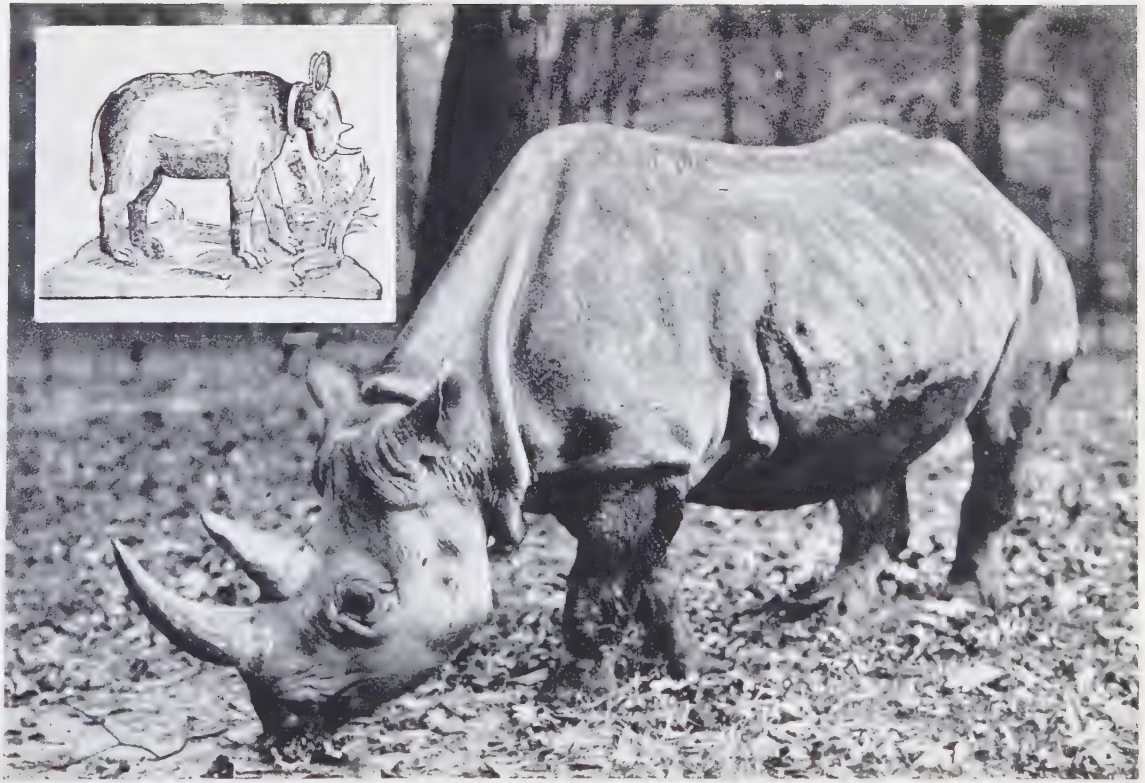
How different this from the same tale told by Sir Samuel Baker, who professes to be repeating Oswell's own description ! There, the rhinoceros had not even been molested ; it walked towards the rider, then ran for fifteen yards and tossed the man and horse, and the former knew no more until he recovered consciousness, to find himself on a led horse with two men holding him in the saddle.

Thus are histories made, and the dangers of big-game shooting illumined with the warm glow of romance.

The stories of rhinoceros-hunting are legion. Opinions differ as to the danger of the encounter; some of the native tribes despise the creature, others fear it more than the elephant. European hunters and traders agree that the damage it does is the result of fear rather than malevolence. It has an acute ear and a keen sense of smell, but very weak eyes, which are often handicapped by the obstruction of the horn.

The unaccustomed noises of a passing caravan agitate the nervous creature long before the sense of smell has fixed a point of danger and turned nervousness into a panic that sends it headlong to safety, or with almost equal possibility may drive it right through the long line of carriers, with much resultant excitement and breakage of loads.

Such unfortunate chances added a grim horror to the infamous slave trade. A rhinoceros, dashing through the long files of wretches fastened by wooden yokes to one another, would often break the necks of every one of them. The most ludicrous example of this impetuous charge dates from the beginning of last century, when a lumbering rhinoceros dashed into a battery of Cape Artillery, putting it totally out of action. Sight must be of some importance, nevertheless, if there be any truth in the statement of the farmer in the Athi Plains, who told Mr. Roosevelt that his white horses had



New York Zoological Society

THE AFRICAN WHITE RHINOCEROS

Inset: A young two-horned rhinoceros in the Sultan's collection at Constantinople

been charged so often by rhinoceroses that he had painted them khaki to avoid further trouble.

The beast only charges by chance in the direction of the hunter, unless it be wounded, and even then but rarely, though the imagination of men in great danger often leads them to believe that they only escaped from a serious predicament by extreme agility. The wonderful sidestep which Maxwell says would do credit to a Torero could not escape the wide swing and well-directed action of the rhinoceros' horn; and there is little time to avoid an animal that gets into its stride with surprising quickness, and covers ten or, according to Maxwell, twelve yards in a second. Two or three preliminary sniffs mark the intention to charge (this sign of anger was noted in the contest arranged in Lisbon in 1517 against an elephant; the snorts raised little whirls of dust); it begins with a trot and develops into a gallop, with tail up and head lowered to take the whole impact on the horn. A fight between rhinoceroses is the eternal battle of sex and the age-old struggle of arms *versus* armour, in which the contestants know well their weak spot—the soft underparts which can be cut with a small knife. Deep and long are the furrows on the cheeks and sides of many rhinoceroses, but the tough hide is too much for the sharp-pointed horn with all its driving force. Maxwell, who killed a female and wounded her mate, tells how it first prodded her with its horn and finally struck with such force that the body was rolled over; but even that blow did not

pierce the skin. Lion-hunters, using the knowledge, cut a hole in the hide of a rhinoceros bait, so that their quarry may not eat too quickly nor carry off the meat.

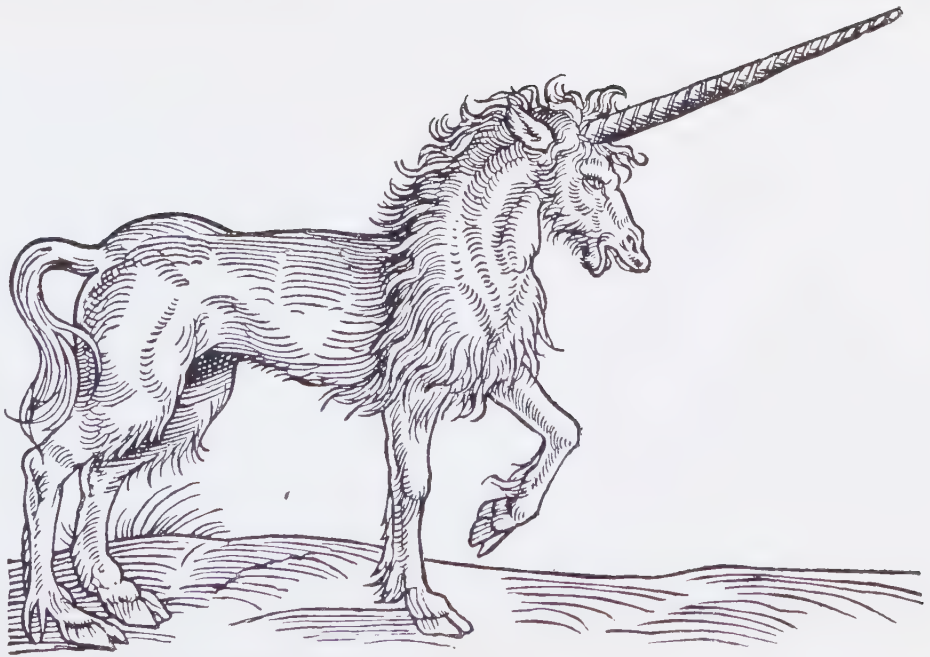
To modern rifles the protection is valueless, but in the days of the smooth bore the sportsman required to shoot from thirty yards to achieve success. The soft iron spears of native hunters are of so little account against the armoured hulk that they can only attain their end by traps and trickery. The rhinoceros has a habit of leaving droppings in definite places, often at the foot of a large tree. There they dig a hole but little larger than a hat-box, of which the lid is made of sharpened slats pushed into the surrounding earth and pointing downwards at the centre.

Round this hole is a noose fastened by a long rope to a log of two or three hundred pounds weight. The trap is covered with leaves and droppings. The animal, pawing the ground, slips a leg into the hole ; as it is withdrawn the sharp spikes stick to the skin, and form a frill on which the noose rests until the first tug pulls it taut. The beast rushes away hauling the log, and leaving a broad trail through the forest ; but, so clogged, it is quickly wearied, and in general is found a self-made captive round some tree. There it is killed at discretion not without risk, for in the fury of pain it often breaks the rope and charges the surrounding mob of spearmen with terrible effect.

The Africans do not make pets, but tame rhino-

ceroses have been kept by Eastern princes for some thousands of years. They take them everywhere with the court for show, or as emblems of royal power. In 1398 rhinoceroses and elephants were made to bow down before Timor, the conqueror of Delhi. They were taught to carry a howdah like the elephant, or, like so many other creatures, were set to fight for the royal pleasure, being painted in distinctive colours that the wagerers might follow more easily the fortunes of their champion. The Indian haunt of the rhinoceros is very different from the open plains or the scrubby hillsides in which the African is found, and the mode of hunting is varied accordingly. We have heard of Hindoos catching a rhinoceros in a pit, and, in their perplexity, appealing to the British Raj on the means to employ for its extraction ; but the drive is the traditional method for destroying the old and capturing the young. Tamerlane in the fourteenth century hunted the rhinoceros thus ; Baber also in 1525 ; and quite recently the Maharajah of Nepal arranged a similar drive to capture calves for Herr Hagenbeck. The country is broken and covered with jungle-grass, twenty or thirty feet high, in which a row of beating elephants is lost a hundred yards away. Through this the rhinoceroses tunnel in all directions, as completely hidden as rabbits in an English cornfield. The writer was told that 3000 cavalry and 20,000 foot were used to beat them from their cover. Five heifers were caught and immediately released. Four males were brought by Herr Hagen-

beck to Europe. One, almost the smallest, thirty inches high, came to the writer's collection. It was picked from the group as the most lively. The choice was good, for some of the others did not live long. It needs the wiles of Ulysses and the strength of Ajax to catch alive a baby African rhino. It may take weeks to find one sufficiently grown to feed and small enough to hold, and then the hunt is only begun. The rhinoceros has excellent ears and an acute sense of smell that call for the utmost skill in woodcraft and stalking. His eyesight is bad, but nature has provided an excellent watchman to counteract this failing. This is the red-billed ox-bird, one of the starling tribe, which attaches itself to most of the hoofed inhabitants of South Africa, and so particularly to this animal as to earn the popular name "rhinoceros bird." Two dozen or so often collect upon the backs of the beasts, picking out the ticks and other little insects that infest the folds of skin, and it is rare to find a rhinoceros, asleep or awake, without at least a pair of these wideawake watchers. They rise with a sharp, twittering note, and, unless they settle again, the hunt is spoiled; the rhinoceros is suspicious, too ill at ease to rest even if his own powers foretell no danger. A mother rhino will move off at once at a fine pace, the hunter following, perhaps for miles, before he can safely plant a mortal shot. The calf usually stays by the mother, making charges that often scatter the native followers before a well-executed tackle brings it to grass. Then it is



THE UNICORN. *Chapter* 16.

From Edward Topsell's "Historie of Foure-Footed Beastes," 1607

tethered, and has to be half led, half dragged to the camp. It must be taught to suck goat's milk from a bottle.

This is the critical moment. Will it feed or will it stand moping, dull and listless, sorrowing for its dam until it drops from inanition ?

It needs friends and may find them anywhere—the cook, a soldier, dog, or cow. Herr Schilling's great rhino went to the coast and thence to Berlin in company of a goat ; and there is a much more remarkable tale of a rhinoceros that had lost such a foster-mother, saved by the motherly love and sympathy of a woman who had lost her baby. With a friend, the little rhino is full of gaiety and high spirits. It will march untethered, with the caravan, though that has to move by slow stages, and at night, to save the weakling from the blazing sun. And on the sea it may have the run of the ship, the pet of every one aboard. Some never grow vicious. The earliest rhino at Belle Vue had the run of the gardens, and did not resent being chased by a boat from his wallow in the lake when he was required for exhibition. He frightened no one, and only annoyed the laundry-maids by mumbling the clean linen on the lines. His successor was very wild, and in the mad fury of youth would charge the walls until the blood flowed. The writer has had others that grew wicked with the growth of the horn. Possibly the process of growth produces an irritation akin to toothache ; the health of the animal is not endangered.

The Indian rhinoceroses in particular are hardy animals, and with care accommodate themselves so well to the vicissitudes of our climate that, though probably shorter-lived than elephants, their expectation of life in a menagerie is about a decade longer, owing to the earlier age at which they join the collection. Adult elephants are easily tamed and trained, whereas a full-grown rhinoceros would pine or dash itself to death. This savagery suited the sports of the arena, and the Romans presented both the Indian and African varieties in the circus. The two-horned specimen shown under Domitian was a terrible fellow; timid or slow, he had to be goaded to the fight, but nothing could stand against his fury. He killed the bear, the bison, an aurochs, and two steers—the lion would not face his wrath; and the bull—the bull he tossed like a ball in the air. The elephant was not set against him, and their respective strengths are still unknown. In Lisbon, when the two were matched, the elephant fled; but far away in India about the same date, the rhinoceros in its turn ran away. Strabo saw a fight without chronicling the result, but at least they met. Their actions are not antipathetic by instinct; the writer had two that for a while were cage companions, and in London a century ago a rhinoceros let itself be crushed to death for love of its friend. "He was constantly forced upon his belly by a pugnacious elephant (Jack) who pressed his tusks upon the back of his neighbour when he came near the palings which separated their en-

closures." "This rough treatment appears to have led to his death, as Professor Owen found, on dissecting the massive brute, which weighed upwards of two tons, that the seventh rib had been fractured at the bend near the vertebral end, and had wounded the left lung." The Council adds that "as the animal had been upwards of fifteen years in the menagerie, its longevity, rather than its decease, was matter for remark."

They do much better now. Rhinoceroses were very rare in Europe before the Cape route to India was discovered. The two in Lisbon are the first recorded, 1498 and 1515, but very probably they occurred occasionally at Constantinople. Thevet saw one in Cairo, 1544, and there is a fine engraving of a young Ketloa (*i.e.* Black Rhinoceros) in Aldrovandus, probably the one seen by S. Kiechel of Ulm at Constantinople in the sixteenth century—a tame specimen wearing a leather collar. The beasts, both African and Indian, were well known to the Ancients, who mix very careful observation—for instance, of their biting habits—with most ludicrous beliefs, that they carry the young on their backs, and that they whet their horns upon a stone before fighting one another, which they do after the manner of bulls. The horns caused much searching of heart; two horns tandem were beyond their comprehension, and the second was placed on the right shoulder by those who knew the beast, and those more ignorant depicted a side and median horn on a creature very like a cow. Nor could they distin-

guish sex in these strange creatures. "All are males," says Ælian. "Are they bred from the rocks, these awful beasts, or from the land or vitals of the earth, or do they spring from mutations of themselves; horrid portents without love, marriage, or production."

To what myth in the misty past is due the strange belief that cups made of this horn betray a poisoned liquor? It is an Eastern tale well known and widespread long before it grew current in the West, where it was fostered by the Arab traders who waxed fat on the silly notion. It was implicitly believed by Indian princes.

That and more. "On the day that they drink from the cup, they cannot fall sick, nor suffer if wounded, nor be injured though they pass through fire."

"Wherefore these cups belonged to the king alone, nor might any other hunt this animal." [1]

"And," said Damidis to Apollonius the seer, "do you believe in this tale of the cup?"

The sage replied, "I believe it if I find the king of this country is immortal. For if any one gave to me, or to another, such a health-bearing cup, is it not likely that I should use it daily and drain it to the dregs?—nor could any one blame me for getting drunk under such circumstances."

[1] Philostratus, *Appollonius*, about A.D. 250.

16

THE UNICORN

THIS strange creature that may not even be termed an animal is most worthy of inclusion among the beasts that are strange to us, for though it can be found alive, most people consider it to be a mythical creature, one that does not exist, a mere figment of exuberant imagination.

" We are come," as that worthy clergyman, Dr. Edward Topsell, wrote in 1607, " to the history of a beast, whereof divers people in every age of the worlde have made great question, because of the rare Vertues thereof ; therefore it behooveth us to use some diligence in comparing togither the severall testimonies that are spoken of this beast, for the better satisfaction of such as are now alive, and clearing of the point for them that shall be borne heereafter, whether there bee a Unicorne ; for that is the maine question to be resolved.

" Now the vertues of the horne, of which we will make a particular discourse by it selfe, have bin the occasion of this question, and that which doeth give the most evident testimony unto all men that have ever seene it or used it, hath bred all the contention ; and if there had not bin disclosed in it any extraordinary powers and vertues, we should as easily beleeve that there was a Unicorne in the worlde, as we do beleeve there is an Elephant

although not bred in Europe. To begin therefore with this discourse, by the Unicorne wee doe understand a peculiar beast, which hath naturally but one horne, and that a very rich one, that groweth out of the middle of the foreheade."

If there can be, and is, an animal, a bird, and a fish with a single horn in the midst of its forehead, namely, the rhinoceros, the hornbill, and the narwhal, which, though not a fish yet lives in the ocean, why should not we believe in the existence of the unicorn ?

So far we are in agreement with the worthy divine, and thank him in advance for excluding all these creatures which, one or the other, are held to be the original unicorn or the basis of the idea on which that mythical beast is founded.

"Now," he continues, "our discourse of the Unicorne is of none of these beasts, for there is not any vertue attributed to their hornes, and therefore the vulgar sort of infidell people ,which scarcely beleeve any hearbe but such as they see in their owne Gardens, or any beast but such as is in their own flocks, or any knowledge but such as is bred in their owne braines, or any birds which are not hatched in their owne Nests, have never made question of these, but of the true Unicorne, whereof ther were more proofes in the world, because of the nobleness of his horn, they have ever bin in doubt : by which distraction, it appeareth unto me that there is some secret enemy in the inward degenerate nature of man, which continually blindeth the eies

of God his people, from beholding and beleeving the greatnesse of God his workes.

" But to the purpose that there is such a beast, the Scripture it selfe witnesseth, for David thus speaketh in the 92nd Psalme : ' My horne shall bee lifted up like the horne of a Unicorne.' "

From this triumphant conclusion we disagree entirely, nor do we credit a subsequent statement : " He is an enemy to the Lyons, wherefore as soone as ever a Lyon seeth a Unicorne, he runneth to a tree for succor, that so when the Unicorne maketh force at him, hee may not onely avoide his horne, but also destroy him; for the Unicorne in the swiftness of his course runneth against the tree, wherein his sharpe horne sticketh fast, then when the Lyon seeth the Unicorne fastened by the horne without all danger, he fauleth upon him and killeth him. These things are reported by the king of Aethiopia, in an Haebrew Epistle unto the Bishop of Rome."

" It is sayd that Unicorns above all other creatures, doe reverence Virgines and young Maides, and that many times at the sight of them they growe tame, and come and sleepe beside them."

This story is the key to the riddle that has so long perplexed humanity.

The belief in a horse-like unicorn whose horn is a specific against poison, did not exist among the Greeks or Romans. It appeared first in the Vulgate, and as far as one can see had a Hebrew origin. There appears to be no justification for the word

"unicorn" as a translation, for instance, of the Hebrew "Rem," which is rather some wild ox; but the ancient translators might easily transfer to a great physically strong beast the attributes of a one-horned creature of the most powerful and malignant kind, whose power could be, and was, represented in ancient sculpture by an extreme exaggeration of its distinguishing feature.

Such a creature exists to-day, and was a fearful menace to the Hebrews and to the Assyrians, from whom they got many of their ideas in art and religion.

The opposition of the lion and the unicorn to one another never existed in Nature. We are accustomed to it in heraldry where, however, as on our own coat-of-arms, they are mutual supporters. And a similar setting is found on the stones of Assyria, carved four thousand years ago, where the lion and unicorn are again found face to face, not to attack one another, but as dual enemies of man, who with outstretched arms is striving to save himself from destruction by his most terrible foes—the lion, the bane of all primitive agriculturists, and the still more terrible poisonous snake; in this case, the Cerastes or horned viper, whose single horn is about an eighth of an inch long. In the ancient sculptures that horn is shown twisted, and in length exaggerated a hundredfold.

The Cerastes is the Unicorn, and to its poisonous nature is due the supposed efficacy in detecting poisons, on the principle of every poison being akin

THE CERASTES AND THE UNICORN

i. The Assyrian Cerastes represented in worship. *From Jastrow's "Bildermappe zur Religion Babyloniens und Assyriens" (Töpelmann, Giessen).*

ii. *and* iii. The eight-horned Cerastes and the Unicorn, as pictured in the *Ortus Sanitatis* of Johann von Cube of Mainz, 1491.

to other poisons. The horn of the unicorn, either used as a cup or ground to powder, was held to detect poison by causing the liquor to froth and boil; the horn of the Cerastes which in the old Natural Histories is a serpent with seven large horns as hard as rams' horns, had the same virtue. The wealthy purchased the Cerastes horns at a high price to form knife handles, because poisoned food frothed at their touch (*Ortus Sanitatis*, 1491). How fearfully those ancient magnates lived: a worthy Cardinal paid £10,000 for his cup of certified rhinoceros horn. The narwhal, whose horn in general adorns the unicorn, was an unknown animal when that figment first took shape.

And why did this cruel, ferocious, dangerous creature come tamely to the hand of innocent maids? Is it not a mere statement of the Bible story? The woman who was without guile had domination over the serpent—a serpent of a poisonous kind, for though her seed might bruise the head of any snake, that kind alone would *bruise his heel*.

17

THE FLAMINGO

THE Flamingo is a bird of superlatives—one of the tallest, strangest, and withal most beautiful of avian creatures. Its colour is an inex-

plicable enigma ; a deep ruby red in the Western zones, yet in the Old World the universal hue is a rose-tinged white, till flight sets it on fire.

The Greeks called the flamingo a most expressive word—" Phoinikopteros "—" the wing of flickering flame." Perhaps those who named flamingoes saw them in flight over some great clear space, as the writer saw them over the lagoons of Carthage, when the sun, striking their rose-covered pinions, made of them a flaming ribbon that melted into the ethereal blue. The glorious spectacle is to be seen in all the marshy lands of Africa. Flamingo figures are common on the predynastic earthen bowls of Ancient Egypt, and though they are not pictured on the great obelisks or tombs of the historical period—perhaps because they arrived on the banks of the Nile at an inauspicious moment and were therefore birds of ill omen—they were always numerous in Egypt and the prey of fowlers. Flamingoes are still found in numbers on the lagoons near Alexandria, the city named after its founder, Alexander the Great, to whose munificence is due the Natural History written by Aristotle, but there is no mention of the bird, why one cannot say. Aristophanes knew it well enough. In *The Birds* he says :

" Pray what can that bird be ?
That is not a common object such as you can always see.
That's a marsh bird, lovely creature, bright and red like fiery flame.
So should he be, for flaming-o is the lovely creature's name."

The flamingo is the marsh bird. It is found in myriads in the lagoons and shallow, stagnant pools of tropical lands in every continent—not wandering far into more temperate zones. Flamingoes migrate into Europe on a westward course, missing Greece and barely touching Italy. Odd stragglers appear from time to time and circle long above the Zoo at Rome, half inclined to settle with the captives down below.

France has many fossil remains of ancient date, and had the bird in thousands in her southern marshes throughout the Middle Ages. There are fewer now, but the flamingoes still breed in numbers in Southern Spain in the pestilential "marisma"—great desolate tracts of swampy ground along the Guadalquiver. This striking bird fired the imagination of poets and artists in these sunny lands; they painted its gorgeous tints, or with the pen made it a thing ethereal; the common details of its life none sought to know. One can hardly credit the fact, but it is a fact, that it has been reserved for the camera and our own time to disprove most curious statements as to the nesting habits of a bird that breeds in colonies of thousands on the ground. No writer of antiquity suspected the facts which have been proved by the greater keenness and resource of modern naturalists, foremost among whom is Mr. Frank Chapman, an American. The difficulties are twofold. Many naturalists failed to find the flamingo colonies, which are always far from human habitations, are varied in position each

year according to the rainfall, and are abandoned when the mud is baked by excessive sunshine. Mr. Chapman searched a fortnight before he found the mud-flat on the Bahamas, where was the object of his search. And then to observe the birds! They rose in a body at his approach, but settled near. When he retired, they returned on foot. He then made a hut of boughs, which he entered with a companion, who retired alone. By this simple ruse he got into the midst of the colony and observed everything without arousing the suspicions of the birds. The thickly clustered mass of nests, mostly quite low, looked like mud soup-plates crowded on a table. The eggs are white—two, and occasionally three, in number. The flamingo sits just like an ordinary duck, the knees of her long legs sticking out behind, the toes in front. Grooves in the nest, as well as the evidence of the camera, prove the straddle-legged posture to be a figment of fancy, in spite of the assertions of eye-witnesses through the centuries. But the photographs show the error is not entirely without excuse. Where the ground falls away some of the nests are fifteen inches high or more, and in the foreground of a photo published by the National Museum at Washington, a flamingo, one in five hundred, is certainly lying across such a nest, its legs dangling down behind. The head is stretched in front, intent, perhaps, on picking something up. An observer at a great distance may have taken the particular for the general case, and considered the few legs he saw as typical of the rest.

[Photo: E. W. Lord]

THE FLAMINGO

Left. A curious illustration of a flamingo with knotted neck, from von Cube's *Ortus Sanitatus*, 1491.

The flamingo is anatomically nearest the goose. Its long neck is due not to more bones, but to more lengthy bones; but it somewhat resembles the heron in habit, as well as length of leg. The nestlings, for instance, are fed at first on regurgitated food, which they take from the parent's beak. The development of the chickens is very remarkable. For two months after hatching they are white, their beaks are straight, and they pick in the normal way of fowls. Then they moult into a buff feather; the upper mandible grows rapidly and takes the sharp downward angle peculiar to the race, *and becomes movable*; it falls like a lid upon the lower mandible, now grown broad and deep and inarticulate. The young bird is now fitted, like its parents, to feed with head reversed. The food is water animalculæ and small crustacea, from which the mud is sifted through the curious fringe, resembling whalebone, which edges either mandible. The tongue is no less wonderful, almost cylindrical in shape, three inches long, two in circumference, and covered with short hairs; it is pulpy rather than muscular, oily and black, and it ends in a great knob of fat, which, Dampier says, is a dish fit for a prince. Apicius, "whose voracity," says Pliny, "swallowed future races," discovered this delicacy some sixteen centuries earlier and propounded its seasoning with scrupulous care. The brains and tongues of flamingoes were *bonnes bouches*, ranking with the dish of nightingales' tongues, that has discredited Heliogabalus. Martial unites these

dissimilar birds in his biting epigram on Roman gluttony :

"Dat mihi pennarubeus nomen ; sed lingua gulosis nostra sapit : quid si garrula foret."

"Red wing, I'm called—my tongue's the morsel choice—
How short would be my life if I'd a voice."

Pheasants from Scythia, Oryx antelopes from Africa, and flamingoes come to the grill in Juvenal's *Satires*. Vitellius, a century later, finds four things requisite for the perfect feast, milt of eels, liver of wrasse, pheasant brains, and again the lordly flamingo. By grace and beauty it almost grew divine ; a chosen host of the self-deified Caligula. Fortunately the dish is unknown to our *nouveaux riches* or "flamingoes at a freak feast" might form in one a headline and an epitaph.

Many are captured, certainly, but only for exhibition purposes.

The flamingo is a wary bird. He never feeds without a watcher, and when he sleeps in the shallows a long-necked sentinel is ever on the alert to give the "honk, honk" that puts the flock in flight to safety. The hunter has to circumvent this sentinel standing knee-deep in the open water, and kill it before it can make a sound. Covering his head with a basket, he swims and floats down the river, then walks, and lastly crawls along the mud, close to the sentinel. He aims to seize his quarry by the neck and drag it under water. The work is difficult, but if it be successfully performed, his friends can often net the then defenceless flock.

Flamingoes are also taken in nets spread in reeds, through which the birds have been often driven until they cease to fear them. The captured birds are forwarded in large crates. They generally travel well, but there is often trouble. If they have lain down any length of time, their circulation is impeded and they cannot rise unaided. One cannot help them easily either—just the slightest finger touch on the wings—for flamingoes are most curiously constituted. If at all out of condition they cannot bear even the most gentle handling. Alice might have used one as a croquet mallet in Wonderland; elsewhere, with careless handling, there is one slight shudder, a drooping head, and naught but a bundle of feathers! They are not otherwise weakly. Healthy birds have some twenty years of life in view under suitable conditions.

They are not familiar, but soon grow tame; in Manchester the writer has known them to rise and circle round and settle on the pond again.

They agree with ducks and feed with them, and should be found on many ornamental waters.

Greater experience will lead to still longer life—that little something needed to raise the American bird to the European level has yet to be found—but much has been learned—above all, that coddling is harmful. A bright, warm, sunny house complete with pretty pools, gives them no pleasure, cuts their keen appetite; they only sip and die.

Flamingoes require much space and some open water. Cold does not affect them, but with the

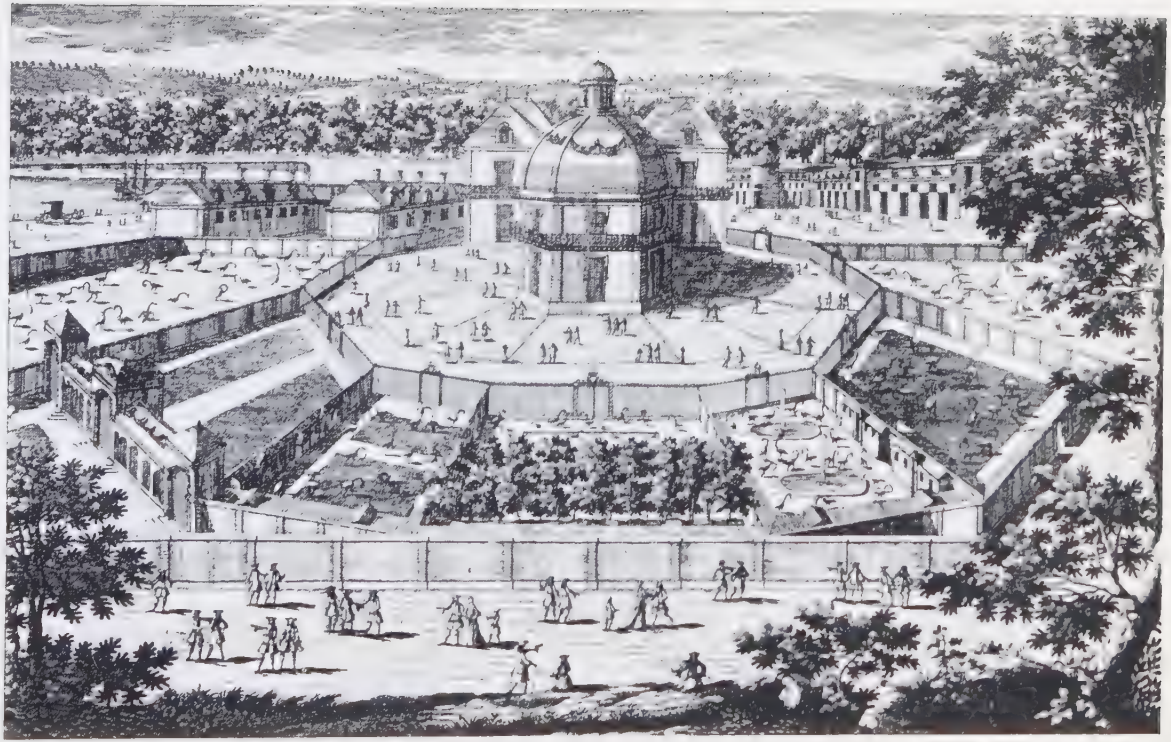
slightest film of ice the birds are frozen in and doomed ; any attempt at rescue makes them afraid —they struggle, break their legs, and have to be destroyed. This danger can be avoided without expense and with but little care. At the intake, dam a space three inches deep and so small that the running water will prevent freezing—the little ridge will be hidden when the pond is full, though it need not be much deeper except for one two-foot hole in which the birds can go to bathe ; let this be at the outfall, and when frost threatens open the outlet, but leave the water running. The small dam will always be full, safe, and sufficient for the birds, the overflow can do no harm.

A moderate frost makes them alert and lively. Rough wind delights them ; they face it with joyous cries, trying to rise on pinioned wings : they run with outstretched neck, their gorgeous plumes a scintillating symphony in white and flaming pink.

18

MODERN GARDENS : TRADERS, SHOWMEN

THE Portuguese and Spaniards having discovered as it were North and South America, most of Africa, and the free road to India, made the Peninsula for a short time the home of zoological



THE MENAGERIE OF LOUIS XIV. AT VERSAILLES

novelties, and created a fashion in animal keeping, so that beasts and birds became the correct gift of one nobleman to another.

Several elephants and two or three rhinoceroses came by the long sea route, but naturally no tigers or other large carnivora owing to the difficulty or impossibility of providing their customary food.

The second rhinoceros has become famous as the beast sketched by a friend, and afterwards reproduced by Albrecht Dürer, and engraved on a plate that did duty in all the Natural Histories of Europe for a century. It is more interesting from its encounter with an elephant. It was a tame, gentle rhinoceros, a great favourite at Court, but a discussion having arisen on the antipathy mentioned by the ancient writers, Manoel I. could not resist the temptation to test the matter. To that end he closed in a portion of the Ribiera, a fashionable promenade in Lisbon, and erected stages for the Court to watch the fun. The rhinoceros was hidden behind a carpet that stretched between the King and Queen's boxes. It scented the elephant's approach, and at once lowered its head and snorted. These snorts attracted the elephant's attention and finished the contest, for no sooner had the young creature seen the rhinoceros than, in spite of the mahout, it turned and fled, smashed two iron bars of eight square inches (*sic*), forced its way through the narrow grille, and never stopped running until it reached its quarters.

This was May 1, 1515. In the year 1517 the

animal was sent as a gift to the Pope, and the ship being lost off Genoa, the body alone reached its destination.

These were the small beginnings; the new craze spread northwards as the English, French, and Dutch joined in the exploitations of the New El Dorado. Antwerp was the great northern port. Albrecht Dürer in 1521 describes a garden at Brussels as like a paradise; but over a century was to pass by before the French king, Louis XIV. the Great, attacked the pre-eminence of the sultans of Turkey by the establishment of the first zoological garden in the modern sense. It was designed by Le Vau at Versailles on the site of an old *mesnagerie* (*i.e.* fattening yard for cattle) of Louis XIII., and its fame spread so rapidly over Europe that the word quickly became the cosmopolitan term for a collection of wild animals, though curiously enough in the fifteen years (1660–1674) that it interested Louis, there were no large carnivorous beasts.

The big festivals that he gave to distinguished visitors, from 1663 to 1682, were held at Vincennes. At the fight in honour of the Persian Embassy, July 1682, a tiger was opposed to elephants, and killed. The combat in honour of the Dauphin later in the year is memorable for the skill and valour of a cow which defeated the royal favourite, a tame tigress from Morocco, a second tiger, then a lion, and finally a wolf.

The merit of Le Vau's creation lay in the collection of all the specimens in one place, a garden

of five hectares (12½ acres), arranged in the form of a fan overlooked from the handle, which was an ornate pavilion.

The paddocks and enclosures were fitted with fountains and contained vast numbers of birds and a certain number of beasts, including an elephant reputed peaceable.

M. Loisel, in his *Histoire des Menageries*, gives exhaustive details of the management of this collection of animals. With Colbert at the Treasury accounts had to be kept correctly, and the expenses and prices rendered by the Sieur Monier, who collected specimens in the Mediterranean basin for many years, travelling annually to Alexandria and sometimes beyond, have a value far beyond the mere dilettantism of a natural history student.

The round journey from Paris took approximately eight months, of which the single sea passage from Alexandria to Marseilles required anything from eighteen to forty-two days, forty days were spent in quarantine at the port, and the journey to Versailles or *vice versa* took forty days more. It was performed on mule back partly, and by water *via* Rouen.

Such rough usage and delays diminished the stock very much, especially the more delicate creatures, such as flamingoes. Certainly they were cheap enough in Alexandria—4 livres 10 sols a dozen, roughly 2 francs each. Purple galinules, the beautiful Sultana's birds, were 1 livre, say 6 francs ;

ostriches cost 30 livres ; gazelles, 5 livres, but they travelled the best.

The total money spent on the trip of 1679 for animals was 529 livres, the total expenses 5920 livres. The results did not justify the cost and Le Sieur Monier's trips were stopped. Thereupon he began to travel on his own account and offered his stock at Versailles, and no doubt elsewhere. Although the king paid for one ostrich 330 livres, and other stock in proportion, he got his animals at half the price that he had previously paid.

There were other collectors for the royal gardens, and every captain in the Indian, African, and American trade was expected to bring home rare creatures. Some captains in the Levant having refused to accommodate the live stock, a formal note of such stringency was sent to the consuls in the Levant ordering them to see that the king's animals were accepted and carried at the usual rates, that the difficulty disappeared.

After the death of the Duchess of Burgundy in 1713, this zoological garden ceased to interest the Court, and though it improved towards the end of the century, it was much inferior to that of the Condés at Chantilly. At the Revolution it contained a lion and some other dangerous animals, as well as many inoffensive creatures and birds, and the new zeal for liberty brought about a rather comical situation. The Jacobins of Versailles under the flag of Freedom, with drums beating, marched to the menagerie to demand in the name of the people

and in the name of Nature, liberty to creatures by nature free. Laimant, the director, made no objection, "but," said he, "some of my charges are impervious to any sentiment of gratitude; they would probably devour their liberators—let me hand you the keys."

By an immediate and unanimous vote these beasts were left in prison, also the rhinoceros whose bulk made a similar impression. They were transferred in 1794 to Paris, and became the nucleus of the Jardin des Plantes. The others—birds, monkeys, rats, deer—were set at liberty. Some were killed and eaten, many died, but a large number of the cervidæ in particular became acclimatised and bred in the neighbourhood. Among the rats were several couples of Rats of Java that swarmed to such an extent that their burrows threatened the foundations of the palace and other buildings.

Other princes and notables throughout Europe emulated in a greater or lesser degree the zoological magnificence of the French. None of the collections were so extensive, but those of the House of Nassau received far more of the world's new creatures. The Dutch, made wealthy by their lucrative trade with the East Indies, and interested in the strange creatures from their distant colonies, became enthusiastic naturalists—animal dealing was so remunerative that the Dutch East India Company established a collecting-garden or dépôt at the Cape, and provided cages and stables on the quay at Amsterdam for the reception of stock. Dutch

showmen travelled Europe with their beasts. The rhinoceros that created such a furore in Paris in 1748, and from there passed on into Italy, made a fortune for its owner—how great may be gauged from the price, 100,000 crowns, asked of Louis XV., who wished to buy it for Versailles. In 1751 the Blue John Menagerie and Beer Garden was opened in Amsterdam, the first of those combined show and dealing menageries that have since become common. It was the first menagerie open to the public by payment. The admission fee was fourpence, and it contained at one time or another very rare creatures. Orangs Utan, ostriches, cassowaries, spider monkeys, sloths, and naturally all the usual creatures. It was a place of popular resort, and special efforts were made to acquire for holiday times novelties which were sold afterwards to dealers, or to princely clients, all over Europe; the new Zoological Garden at Schönbrunn, Vienna, for instance, was stocked for the Emperor of Austria.

The first English dealer, Pidcock, set up his menagerie in the Strand at the end of the eighteenth century.

In 1805, George Wombwell opened his adventurous career by the purchase of two very large boa-constrictors (probably Reticulated Pythons—*Editor*) for £75 and recouped himself for his outlay in three weeks. Stimulated by his success, he set up as an animal dealer in Commercial Road, London, and in 1807 began those caravan peregrinations which made him famous. As a measure of the risks of the

business we may state that his first giraffe cost £1000 and died within three weeks of purchase.

The happy finish of the Napoleonic Wars which left the carrying trade of the world and most of the colonial lands in the hands of this country stimulated an interest in animals in the capital which spread very quickly over the provinces. The aristocrats of Bath, Cheltenham, Edinburgh, Manchester, Bristol, and Dublin established gardens, but most of them failed ignominiously and very quickly. Society's interest was not sufficiently sustained to provide the money for so expensive a hobby. Some survived, and others have been revived—all, without exception, now depend for success on the money of the masses of the people.

19

LEOPARDS AND THEIR KIND

A ZOOLOGIST of a humorous mind might well suggest "panther" as the best name for leopards and their kind, not because of its antiquity —though it comes from the Greeks—but for its derivation, *πανθήρ*, *i.e.* all wild animals. For surely so many animals have never been confused with one another as under the name "leopard." The leopard, puma, serval, cheetah, lynx, caracal, and ounce overlap in endless confusion; the puma and the jaguar are given the names lion, tiger, panther, or

painter, and are sometimes mistaken for the ocelot, and the leopard itself has been known as spotted tiger, panther, and pard. The Heralds' Office even fails to distinguish the leopard and the lion. But exploration and improved transportation that have brought us the living animals—one the snow leopard, only thirty years ago—and photography that enables any naturalist to make a better classification in an hour than his predecessors from Aristotle to Buffon managed in twenty centuries, have removed any possibility of their being confused in future.

The only relic of this welter of error is "panther" —a word now meaningless to the scientist, but forcing its way gradually into our vocabulary as the name of the black or melanistic leopard.

The whole muddle arose where it is never suspected, in the ignorance of the Roman writers. One only needs to go back to the Greek to get complete enlightenment. Oppian, in his *Treatise on Hunting*, joins the grey-eyed πανθὴρ (panther) with the weasel as a nuisance in the poultry yard, and continues, "but enough of these small creatures. Let us speak of bigger ones—the lion, tiger, πάρδαλις."

The "panther" is the lynx, and Aristotle's only mention of it as having four cubs confirms the view. πάρδαλις is the animal we call leopard now. Oppian and Ælian prove that, by a correct description of the animal, and the mode of capture under long tunnels of brushwood, and by showing with what craft it takes the Barbary Ape. The πάρδος, pardus, the union of pardalis and lioness, as they thought,

THE "BLAAUW JAN" MENAGERIE AT AMSTERDAM

From Loisel's "Histoire des Menageries" (Laurens, Paris).

is the Cheetah : as we see from Martial's note that a pardus hunted in the arena with dogs—a training repeated in our own day. Leopardus, lion pard, was a later and meaningless term, but we have retained it as the common name. The scientific *Felis pardus* is rather more misleading. The tangle is beyond repair.

The leopard was seen rarely, if at all, in the ancient courts of Egypt, India, Assyria, or Persia ; in Rome it had a most curious history. From about 55 B.C. to A.D. 50 leopards were shown in hundreds, then suddenly they almost disappeared. The reason, which would be hard to guess, is simple to students. Lions were royal beasts, leopards were not, so they became the biggest carnivora available for provincial shows, were caught in numbers for them, and were killed by peasants.

Scientists are now agreed in classing the cheetah apart from the leopard, from which it differs considerably in outward appearance, being lighter in build, higher on the leg, and internally modified in dentition and in the lack of fully retractile claws.

In a word, without losing the stealthy habits of the leopards, it has been modified from a tree-climbing to a ground-hunting animal. No animal can approach it in speed over a short distance. The most agile antelopes of India and Africa, where it is found, fall victims to the cheetah. For a quarter of a mile it can travel two yards to one of the Black Buck or Impalla, and bounding to their neck, it rolls them over in its impetuous rush. If that fails,

there is no reserve of strength or breath for further effort, and the cheetah gives up the chase, rolls in the sand, or indulges in playful gambols on the scene of its discomfiture.

This habit of supreme exertion, alternated with laziness, makes the cheetah unsatisfactory as a menagerie specimen, where the life of slothful ease soon undermines both muscle and constitution ; but in semi-domestication, for which it is well fitted, it has been the plaything of princes—Asiatic, African, and European—for many centuries. Hence, in the writer's opinion, the name Chita, the spotted one, of all spotted beasts, the darling.

Having but little brain power, it is easily tamed—that is, brought under man's domination and trained to show its instinctive cunning and wonderful speed to order. The process is similar to the preparation of a hawk, but with this difference, that adult cheetahs are used, being captured for the purpose in horse-skin nooses placed under the trees where these animals daily repair.

In India, cheetah-hunting is a slothful sport well suited to an indolent race. The party proceeds in bullock waggons till it arrives within 250 yards or so of a suitable buck. The hood is then taken from the hunting leopard's eyes ; it is shown the quarry, and slipped off the cart. Crouching low, it uses every vestige of cover until within its distance—about 200 yards. A few bounds of great length and rapidity, and the hunt is over. The quarry has escaped, or the enemy has it by the

throat. The keepers replace the hood, cut the beast's throat while the hunting leopard still hangs to it, and present the warm blood in the accustomed feeding ladle. The animal then releases its hold, and is led back to the cart.

The Chinese followed the same sport under the name Hinen-pao. A couple of cheetahs were sent as a present to Anastasius, Emperor of the East, at Constantinople, in A.D. 439—whence the sport reached Italy and obtained an enormous vogue among the wealthy, extravagant chiefs of the great city states. The Turks included the cheetah in the animals they tamed and used ; the Moors were fond of the sport, and it is probably the hunting leopard to which Tavernier refers when writing in 1666, that the Persians chased the gazelle with an ounce (youzze) mounted with them on horseback. Had he not distinctly said that the animal was spotted, one would be inclined to think he referred to the smaller but more active caracal.

The caracal relies for success upon its extraordinary agility. So perfect is its sympathy of eyes and feet, that champion performers in a sport now popular in Persia will kill nine or ten of a feeding flock of pigeons ere they can leave the ground. Caracal is a Persian word signifying " black-eared," an incomplete description that has not, however, confounded it with any other animal. The northern species, the lynx, bears a German name which has caused much misapprehension. Phonetically, it is sufficiently near " l'uncia," the ounce or

snow-leopard, to make ignorant writers confuse the two; while its likeness to "lux" explains the popular but fallacious belief in its wonderful eyesight. From its extreme boldness and pugnacity, the lynx was chosen as the heraldic emblem of the Dukes of Burgundy. Scott mentions it in *Quentin Durward* in this connection, under the name of ounce. That this short-bodied, short-coated, short-tailed lynx should be confounded with the long-bodied, long-coated, long-tailed ounce or snow leopard, is particularly curious. The contrast seems to extend even to their characters. The snow leopards the writer knew were ever the gentlest of animals, more fitted for ladies' pets than warriors' blazons. But as the giraffes we see are usually the mildest of antelopes, because the rough ones break their necks in transit, so the snow-leopard, a highly specialised beast that bears transmutations of climate very hardly, is only represented here by tame and much enfeebled specimens.

There is but little doubt that the above is a full and correct explanation of its apparent docility. The ravages of the ounce in its snowy home, 10,000 feet up the slopes of the Himalayas, are as great as those of the common leopard, and a specimen which has overcome the drastic change of habit and climate and is living with unimpaired vitality in Philadelphia Zoological Gardens, is as savage as the worst of its lowland brethren to which the heavily furred leopards of Persia and Turkestan form a gradual transition and complete connecting link.

THE EMPEROR AKBAR HUNTING NEAR AGRA, 1568

The hunting-cheetah in all its phases. *Pages* 174–5.

From "The Journal of Indian Art," by permission of the India Office.

The leopard seems to have ranged in ancient as in modern times through the equatorial parts of Asia and Africa—places sufficiently inaccessible to the Greeks and Romans to make personal observation rare and rumour difficult to verify.

Felis pardus is the most dreaded of the larger carnivores; it kills for the pleasure of killing; it will enter a compound or a sheepfold and kill every living thing, and on occasion it seeks its prey in the natives' huts, or even in the more pretentious bungalows of Europeans. In a leopard country no dog is safe. Some captive leopards refuse dogflesh, but the presence of any canine fills them all with excitement, and all travellers are agreed on their extraordinary boldness in this chase; they will follow a party for miles in the hope of obtaining the dainty morsel, and they have been known to leap into a palanquin to take a lap-dog from a lady's knee. There is nothing improbable in this to the writer, familiar with their fearlessness. A leopard has been known to enter a trap within fifteen yards of a European's dining-table, and a gentleman in southern India, a friend of the writer, who missed a leopard which twice visited its kill within a few yards of his compound, placed a storm lantern on the carcass and obtained the beast at the third attempt.

The man-eaters, more dangerous than tigers, will enter the very huts for food, and Sir E. Tennent, in his *Notes on Ceylon*, remarks that they are particularly attracted by smallpox patients, so that

hospitals need to be expressly guarded against their attacks.

Being endowed with great strength and address and catlike agility, their food range is enormous—from the smaller rodents and beasts of the field on the ground to the birds and monkeys in the high branches of the forest. The porcupine is not safe from their attacks; they rarely suffer from the defensive quills that work such ill on lions. In India the herds of pig suffer, though the old boars often drive them off, but antelopes of all but the largest races are their chief food, caught at the watering-places or dropped on from an overhanging branch. Clinging to the forequarters the leopards bend back the neck and bite through the jugular vein. Titbits such as nose, ears, and heart are eaten at once, and the body, which has been eviscerated with a few strokes of the paw, is dragged away a short distance for a future repast. It may be to a clump of grass or possibly twenty feet up in the fork of a tree.

Leopard-shooting is a most exciting sport, for a wounded animal will charge, however seriously it may be hit; but the hunt is extremely unsatisfactory, since the haunts of the quarry can never be foreseen. The beast may be lying in some distant cavern, or in the grass, or in some neighbouring tree watching the hunter's movements. Furthermore, leopards are suspicious and circumspect in approaching their kill—no open ground is crossed that can be skirted by a detour, however long, in the grass; the trees

are scanned as carefully as the ground for possible enemies, who, being seen, the leopard departs as stealthily as he came, leaving the chagrined hunter with the belief that the prey has never been near—and once frightened, he is far less likely to return than the tiger or lion, for the smaller the cat the less its inclination to feed on carrion.

Leopards brought to this country are usually obtained as cubs and are often used in animal shows, the Indian variety making the more reliable performers. Adults are too savage for effective exhibition in the rare cases in which they survive captivity. They are caught in a fall trap with a live goat as bait, or with a looking-glass in which they attack a fancied rival. More usually a spring trap is set for them, which must be firmly fastened or they will drag it for miles, and thus incommoded they are often devoured by lions. Herr Schillings, contrary to local opinion, used dead bait with great success, having observed that the leopards carried their half-eaten prey into the trees out of reach of the hyenas.

The typical leopard skin has enjoyed from the earliest times an unvarying popularity for barbaric display. It is found on the earliest priests of Egypt ; it forms the Kaross of the Kafir chief ; in Rome it was more valuable than the lion's pelt. But this bright yellowish body colour is subject to abnormalities which have added not a little to the confusion surrounding this animal.

Albinos, though rare, are not unknown, and black leopards are so numerous as to have been

accounted a different species. This is not the case. Black is a strong colour, and usually breeds true; but both colours have been found in one litter in Dresden Zoological Gardens, and it is probable that the colour only becomes predominant in very dark forests, where natural selection has eliminated yellow. The price of black leopards, a good index of scarcity value, varies from 50 to 100 per cent. above that of the normal coloured ones, while a black jaguar, or serval cat, will cost thrice the ordinary figure. This black body colour is the only distinctive feature; the spots on it can easily be seen in strong sunlight. Cubs have a drab coat thickly sown with black dots which break, at about six months old, into the characteristic curved spot of the leopard or the dotted rosette of the jaguar, or disappear from the puma.

The great cats of America, the puma and the jaguar, are said to equal the leopard and one another in size, the largest measuring between seven and eight feet from nose to tail. This is not borne out by captive specimens, among which the jaguar is almost invariably the largest and the puma the smallest, and none attain the dimensions given.

The two species are closely allied to the leopard in disposition, in their arboreal habits, in their mode of resting on a branch, their four feet pendant, and still more in their manner of feeding. The lion and tiger lie down and hold their food; the leopards and puma, and in a lesser way, the jaguars, crouch to it, lowering their heads to the morsel which they chew

off as they may, rarely using a paw to steady a bone.

The race would seem to have passed to America at a comparatively late period by the great land masses of the north, thence populating the whole continent. The puma particularly has an enormous range. Puma is the Peruvian name ; Cougar, which is also used, is a corruption of a Mexican word. The European settlers knew it as panther, painter, or mountain lion. It is found from the snows of the Adirondacks, through the torrid zone, down to the still more terrible winters of Patagonia, everywhere making dire havoc among cattle and sheep. Three pounds per head is paid for its destruction on account of the damage to sheep and in spite of the number it destroys of those other pests of the squatter, the wild llamas and vicunas. The pumas kill these by springing on the shoulder and bending back the neck until the vertebræ break. Like leopards, they protect their kill, covering it with bushes to keep off the condors. Pumas are stalked or hunted with dogs. They are most easily obtained in winter by tracking in the snow.

Puma's flesh, which was much sought after by the Indians, was found by Darwin to be quite palatable, tasting like veal.

In marked distinction from the leopards and jaguars, pumas are credibly supposed never to attack man, however great the provocation, and even upon occasion to defend him from the attacks of the jaguar. This is not so remarkable as it

seems, because the puma attacks the jaguar under all circumstances, and when men have been present, has acted in the same way. Pumas, like lions, are born spotted, but their general habitat, the open plains, has caused the spots to disappear early in life. A forest existence has deepened those of the jaguar, and the swampy, flooded area of the Amazon and Orinoco has developed in it traits of character rare among the cats. It digs for turtle eggs upon the shore, catches fish, and swims for pleasure. It can thus pass from land to land, and though usually inoffensive to man, occasionally works great havoc among the scattered population when the floods cut off its usual food and drive it, a hungry marauder, to other pastures. In early days the Peruvians honoured this " tiger " as a god, placating it with gifts of live " peacocks " and other birds. The Mexicans pierced their horses' nostrils with splinters of jaguar bone and wore coronets of its claws to make themselves braver and more daring. In those days it was sometimes confused with the ocelot, a cat of less than half its size, but beautifully spotted. But *occellum*—little spot—is not the origin of the name ; it is a kindly thought of Buffon, to save us saying in exuberant moments, " Thalocelotyl."

20

TRAINING WILD ANIMALS

"EVERY dog must have one good thrashing" is a dictum of every dog trainer; it means that the dog must be convinced that it has found its master whom it can obey as leader of the pack. To him it will give unquestioned obedience, and please to the limits of its intelligence; every sign and many words to it bear a distinct meaning, which it will obey whenever given; therefore a dog will do its work or its tricks in any order and as often as may be desired: presumably a wolf well trained would give a similar obedience and be extremely valuable in a wild animal group were it endowed with sufficient intelligence to learn.

But the canines are far inferior in ability to the felines: the domestic cat resolves difficulties more easily than a dog, and left to itself will grow fat and sleek where a dog would starve. There are many trained cats on the stage; the independence of the race alone bars the way to their greater success. The dog is one of a pack instinctively obeying a master: the cat walks alone, adopts a home, and accepts a human being as an amenity. Lions, tigers, leopards, and the like are cats of larger size and must be treated as such. A thrashing is worse than useless as a means of producing a trick, however necessary it may be for inculcating fear and preventing attack.

The trainer must make himself valuable to them as a minister to their comfort without expecting any affection in return : one in a thousand might help him if in danger ; the other nine hundred and ninety-nine would join in any attack made by one of their number—an attack that might come from a beast that but a moment earlier had rubbed against him for the pleasure of contact and had purred with content at a pleasurable tickling.

The training consists in instilling into the beast's mind the futility and disagreeable results of an attack, to be followed by the inculcation of the idea that it is convenient to go through a series of actions rather than be frightened into them. The whole proceeding is a contest of comparative mentalities, and the training may be carried through without any serious punishment.

The first step is to make the beast happy ; good food, a clean, warm cage, and a gentle voice are the essentials at this stage ; then follows familiarity, to be attained by feeding the animal from a fork that is held ever shorter until the creature comes close to the bars and will allow itself to be rubbed and stroked first with a stick and afterwards with the hand. The stick or switch that is to be used as a protection later should be left in the cage so that the lion or other feline may be familiar with it and not be afraid while going through its tricks. A strong kitchen chair is the favourite sword and shield in the next stage of the training, which is often entrusted to a specialist on account of its

dangers. With this homely tool the man enters the lion's den, but sitting down is the last thing that he would expect to do ; he stands holding it by the back, ready for the lion's spring. He has not long to wait. A growl, a slight retreat, a stiffening of the tail, and the lion dashes forward to be received on one or more of the stout legs ; it is beaten, retreats, crawls round to another corner, and springs again upon the ever-watchful chair. The small size of the cage prevents the dash and impetus that would overthrow the man and make a fatal ending. The next effort is an overspring that must be parried with a quick crouch ; and ever, when the assault is over, the lion finds the chair in front, and finally gives up the contest. Then the training begins ; the chair advances, the beast gives ground, is made to move this way or that, to rest only where the man permits. The lion has learned to keep its place. From one place it learns a second and a third, and moves at a command, but there must be no variation.

Groups are trained one by one, and work together —not in combination. In showmen's waggons the arena is the familiar training-cage enlarged. To fit the beasts for exhibition in a grand circle on the stage or circus, the work begins anew, with only one lesson learnt—the need to keep their place; and the big space, with room for rush and spring, has terrors of its own. The beast is bewildered and nervous at the unusual surroundings ; it must be pacified as well as may be, and yet pressed towards the box on which it is to sit. To go near is not

enough. The animal cannot be left until it mounts thereon, and if it should—as it probably will—jump down again, the work must be renewed until it learns to sit there; then it has to be taught to go from one seat to another on command, and finally to leave the ring, which is only an order to take the last place, the home cage. Whether the seat be fixed, or movable like a swing, the training is the same: very simple in theory, in practice very difficult, and demanding the utmost watchfulness and anticipation of moods in the sly creatures, ever ready to fight with one another or to fall upon the trainer who shows any weakness or has for some reason been attacked by one of them.

Fights in particular must be suppressed at once. This can only be attained by long hours spent in the cage while the animals are at play together, and needs a very delicate appreciation of the dividing-line 'twixt rough-and-tumble fun and sullen anger.

With every care accidents often happen from the most trivial causes, such as an unusual flick of the whip, or a temporary forgetfulness of the fact that a lion or tiger walks to right or left of the trainer in moving to its work. The writer once saw a lion worked to a state of fear and exasperation because its cage, which lay to the left of the arena at home, had been placed to the right in the show hall. Three times it returned to its last seat on the back of a horse before it could be driven the few feet in the new direction. The bears are more intelligent than the cats; the most difficult work in an animal show

A GROUP OF TRAINED WILD ANIMALS

From Carl Hagenbeck's "Von Tieren und Menschen" (Paul List, Leipzig).

is usually allotted to them. They can be muzzled when learning their work, and as they appreciate rewards and flattery, the trainer's work is so far eased, but they are probably the most dangerous beasts to train. The polar bears are the least clever of the group.

Sea-lions are very intelligent. They are never punished except for biting, and that is rare. They work for reward—a piece of fish must follow each success. They climb by nature, and quickly learn to surmount any reasonable obstacle. Their eye and judgment is unerring. When they have learned to catch a fish, the speed with which it is thrown soon ceases to have any importance. The great balancing feats are taught by pressing the object gently against their noses; the sensation is pleasant, the reward certain. That attained, it is next held in position until the trainer finds it balanced. He then withdraws his hand; the sea-lion soon appreciates what is required and what brings reward, and so, with intelligence at work, achieves the end. Balancing an object and returning a bouncing ball, the writer once saw taught in a cage loaned for the purpose. The tricks were perfected in three months, and the animal was never punished. The sea-lion comes nearer to thinking than most animals. Elephants are docile and obedient. Their tricks are worked out step by step with the trainer, and the routine will be run through on a command, but there is little initiative and no thought. The monkeys think, and, were they as strong as lions, they would be un-

tamable; indeed, a full-grown chimpanzee is beyond man's power. The best have a mind equal to that of a four-year-old child, full of abstract conceptions, slyness, savagery, and rebellion. They work for reward, and have to be punished for rebellion. They know quite well who is their master, though he may not be the one who provides their food, and in his presence will obey no other; finally, they grow so strong that they refuse obedience to him. The mind works in all their tricks, and pleasure or otherwise in the act affects their willingness to perform it. Consul the Second liked the look of a tricycle belonging to a little girl, mounted it, and, having learned to associate its motions with the movement of his feet, took a pleasure in pedalling. The bicycle interested him equally, and in less than a week, exactly as a boy would learn, he learned to ride it. Consul sought the machine for his own pleasure, and unless he were admonished, left it as soon as he felt at all fatigued. Ringing the bell was a pleasure of which he never tired. He would jump in a travelling-box and close the door, to be carried to the brightness and gaiety of his master's dining-room. Force was required to get him in for the return journey. In short, he thought.

The dog slaves, the elephant obeys, the cat seeks comfort, the sea-lion food, and the monkey makes up its mind to work or not; pleasure, fear, and hope go to the making.

21

BEARS AND BEAR WORSHIP

THE Cave Bear has a firmer hold on our imagination than any other of the pre-glacial animals, some of which were more powerful and many more numerous.

Larger, perhaps, than the Brown Bear, and more terrible in appearance, the Cave Bear was more primitive and less intelligent, and could have been avoided easily by our active ancestors. On the contrary, they sought him out and attacked him.

> Et manuum mira freti virtute pedumque,
> Consectabantur silvestria saecla ferarum,
> Missilibus saxis, et magno pondere clavae
> Multaque vincebant vitabant pauca latebris.

(Relying on their strength of hand and foot, they sought them, and with well-flung stones and with heavy blows of axes they killed many ; some few they had to dodge in the dark woods.)

Numerous remains of tools, hatchets, clubs, and knives made of the shoulder-blades, nails, and teeth-filled skulls of bears, testify to their success.

The bear is the cow of the cold countries ; his carcass provides food, light, and raiment, the weapons of war, and the tools of peace, and for this he was worshipped ; and we may well surmise that the exaggerated notions of size and intelligence are a remains of a religious veneration that can be traced in the Hindu vedas and Grecian mythology, and

has not yet died out before advancing Christianity among the nomad tribes on the inhospitable northern shores of Europe, Asia, and America.

In India, the moon is "King of the Bears," dread ruler of cold, darkness, and wind; the Great Constellation is King Tricanthus covered with a bearskin. In Greece, this is Kallisto translated to the stars to save her from zealous Hera, after her amours with Zeus, whence sprang Arcas and the Arcadians. She is often represented on a bearskin, and is identical with Artemis.

As Artemis and Iphigenia are one and the same, it is possible that the sacrifice at Aulis shows some connection between wind and bears, even in Greece, but this is merely conjecture. But the story of Iphigenia and the worship of Artemis at Brauron gives a succinct outline of bear worship to its extinction. Iphigenia is installed Priestess of Artemis, the she-bear goddess in Tauris, where are human sacrifices. The introduction of Orestes and the flight to Brauron gives a poetic turn to the introduction of the religion into Greece, and the substitution of a she-bear for Orestes affirms the religious connection.

The worship of Artemis in Arcadia has several remarkable features. She, καλλίστο (Kallisto), the most beautiful, was represented by an idol grotesque among the uncouth idols of that backward state; but the quinquennial ceremony of worship, the "Brauronia," was performed with great solemnity. Its central, and to us salient, feature was the conse-

cration of young girls of five to ten years of age to Artemis. They were called ἄρκτοι (arctos-brown bear), and danced, imitating bears, round the shrine of the goddess, dressed in saffron clothes, relics of the bearskins of earlier days.

The young ladies of Athens also were called "she-bears"—but in joke, just as we speak of "flappers"—in the short interval between engagement and marriage, during which they were sacred to Diana, and had to bide in the house, hidden like the bears in their winter cave.

Artemis was a she-bear with her cubs, to whose rough-hewn idol men were sacrificed to placate the provider of the means of life. The saffron coats take us far back beyond Iphigenia in Tauris to a time before the rude mountain tribes had reached the sea, but were subsisting still upon the flesh of the golden straw-coloured bears of the Caucasian Mountains.

In the wild parts of Bohemia it is customary even now for a man, cased in straw representing a bear, to beg at harvest-time for honey, beer, or hydromel. And the women take the straws to the hen-cote—"it makes the hens lay better." Far away in the north-east of Asia, among the Tungusian tribes, we find the same belief that contact with the god of bounty will ensure abundance.

To these wild nomads of the Amur the bear is the staple of life. The flesh is a daily food, but bears are reared from cubs for their great festivals. The night before the sacrifice he is welcomed in every

hut, and his presence blesses every household ; then led far out on the frozen river, he ensures a bounteous supply of fish in the coming year. The next day he is slain, but with quaint care, excuses, and fine show of sorrow. " 'Twas a stranger who did this," say the Tunguses ; " 'tis a Russian axe that slew our beloved." " No bear meat shall ever pass our doors." So saying, they remove a window and pass in the meat. A rude pictured toad fills in the vacant pane that this detested animal may take the blame. And the womenfolk wipe hand-made tears from the bear's head, set in the place of honour at the feast.

The farce continues to the very end ; each reeling reveller is lightly scourged as he stumbles over the threshold from the sacrilegious feast.

The bear festivals of the Ainu, who inhabit Yezo, the northern island of Japan, Saghalien, and some of the Kurile Islands, are far more elaborate, and have been more carefully observed than the others. They believe that the sacrifice brings honour to the bear, and that they are in communion with the " departing." Here is an invitation to the great feast of " sending away," as given to the Rev. John Batchelor, a missionary among the Ainu : " I, So-and-so, am about to sacrifice the dear little divine thing who resides among the mountains. My friends and masters, come ye to the feast ; we will then reunite in the great pleasure of sending the god away. Come ! " And they all come dressed in all their finery.

The bears for these sacrifices are taken quite

A POLAR BEAR—BROWN BEAR HYBRID

At Belle Vue Zoological Gardens. The colouring of the parents is almost equally divided between the fore and hinder parts.

young—so young, indeed, that they are often suckled by the women of the tribe; but they are not put to death until they are full grown. The execution takes place in the *nusa*, or place of sacrifice, around which are set *inao*, or sacred wands with leaves on, these implying eternity.

The bear being brought forth, an Ainu, sitting down before it, announces that they are about to send it forth to its ancestors, and begs pardon for what they are about to do, comforting it with the assurance that lots of good things will be sent with it.

The central idea is: "The divine one was sent into the world for us to hunt. Speak well of us to thy father and mother, and please come again and we will sacrifice thee."

The animal is choked to death between two poles about sixty feet long, and dies in about five minutes without uttering a sound or spilling a drop of blood, which would be very inauspicious. The eyes and liver are eaten in order, by sympathy, to improve the health and eyesight of the devotees; a feast of the carcass follows, at which the bear is present, and finally the head is raised on a pole in the village, there to be worshipped until it decays.

This regard for the bear as a bounteous god of Nature extends along the whole northern coast of the globe. The bear is a god to the Samoyede; in Norway he was almost a man; to the Redskin he is a brother—yea, nearer than a brother. He is the mainstay of the family.

Amongst the North American tribes the bear-

hunt is anticipated with fasting, chastity, and solemnity. When the pursuit has been successful, the hunter, blowing down the bowl of his pipe, fills the bear's mouth, and thus smokes with him the pipe of peace, praising him for his valour in the fight and thanking him for coming when he knew his children hungered.

Bears hibernate for three months or more in the depth of winter, rather from lack of food than inability to withstand the cold. They emerge in spring, very emaciated from their long fast, which gives some point to an old story that Artemis was very angry with the Athenians, who killed one of her sacred bears under pressure of famine, during a siege. They killed it, but, as a punishment for killing one who set them such an example of abstinence and fortitude, the goddess made it useless for food.

The Redskins sought the bear when it was fat and prime in autumn, or, noting the curl of vapour over the sleeping den or the scratched bark of a tree in whose hollow trunk it lay, they smoked it out in early winter. Their quarry was the indolent, peaceful black bear; they avoided the truculent giant grizzly bear that reigned supreme in America until the advent of the modern rifle. Now he is in danger of extinction, hunted to death as a marauder of horses, cattle, and sheep, or sought still more assiduously by wealthy sportsmen as a worthy trophy of the chase.

Shooting bears is usually a tame proceeding, and

the advent of repeating rifles has made the hunt of the grizzly little more than exciting. In the time of the single-barrelled smooth-bore, however, it was too serious a matter to be lightly undertaken. Catlin, in his *American Indians*, records his inability to persuade two trappers to attack a she-grizzly and cubs. She had overthrown their canoe and scattered its contents while they slept, and then, having investigated them on all sides, had retired without molesting them. Catlin adds: "It is a trite saying that man lying down is medicine to the grizzly bear, though it is a well-known fact that these monsters of 800 to 1000 lb. weight attack any man or horse they come across." This characteristic repugnance to touch anything dead or motionless seems to prove that primarily the bear was a fruit-eating animal. This had become an accepted tenet of natural history before the discovery of the offal-eating polar bear.

There is a tale, at least three hundred years old, about two men who were surprised by a bear. One swarmed up a slender tree; the other, being unable to reach this shelter, lay prone, holding his breath—an unnecessary precaution. The bear smelt him and went away. "What did he say in your ear?" said the one in the tree, now rather ashamed of himself. "That you were a coward to desert your friend," was the cutting reply. This illustrates, too, the curious belief that a bear will listen to reason. Bear-talk was always considered "good medicine" by the Redskins. If a bear blocked their path, they

addressed him politely, reminded him of their common brotherhood, praised his nobility, and asked him kindly to allow them an unmolested passage —which he frequently did, for, being by nature inoffensive, the soft accents did not disturb him, and so shortly he went on his way. This soft talk is useless against the polar bear, fiercer and more active than the grizzly, yet the Eskimo hunted him armed only with fire-hardened pikes, or with spears tipped with bone. But it was a tribal matter ; the moment the bear was sighted, the dogs were loosed, and often with the sledge-traces dragging behind them on the snow, they rushed to bay the bear and hold him until the men came up. Great were the rejoicings at his death. Half the booty fell to the village, the rest to the man who sighted the beast—which is wonderful evidence of the value of the colour-protection accorded by Nature to all predatory beasts. Living on the shores of the frozen sea, their food is flesh, and they meet man too rarely to regard him either with awe or fear. Gerardus says they are more numerous than other bears ; in all probability they were merely more assertive and impudent. Their savagery has been the subject of remark from the earliest times—from the story of the six Russians cast away on Spitsbergen about 1600, who lived on bears' flesh for over a year, and only attacked one bear—the others attacked them—down to the exciting escape of Johansen, who was pulled off his sledge by a bear that had stalked him and Nansen from hummock to hummock for two hundred

yards. "Be quick or you will be too late," he whispered as Nansen took his rifle from the waterproof case and shot the beast.

Bears prowled round every camp, and a bullet alone could scare them—just as they came to the camps and carried off the dogs, or made visits to the ship. What a sensation for the watchman going the night rounds when his lamp shone on a great bear in the companion-way! With great presence of mind he pushed the light in its face, and so scared it off.

The truculent creatures even swam after the ship, or shore boats—a very dangerous proceeding, for they were either struck over the head with an axe, or, a noose being dropped round their neck, they became prisoners. They were taken in the same way when stretching for blubber at the bottom of a hole. The rope was passed through the bunghole of an empty cask, into which the bear was hauled and coopered—a captive ready boxed for the Natural History Market. Polar bears are among the most graceful creatures in a Zoological Garden. Flat-footed like other bears, life among the ice-floes has taught them to jump, and hunting the seals has made them long, narrow, and sinewy, stronger in the legs and not so heavy as their terrestrial brothers, which are by far the heaviest carnivores. A Kadiak bear—a variety of grizzly recently alive in Washington—scaled nearly half a ton, and Aldrovanus in 1640 describes a Lithuanian bear that he had seen in Vienna as five cubits long (7 feet 6 inches), with a back as broad as a bull.

These great brown bears were common through northern Europe in the Middle Ages. The British Isles alone were clear of them, though Scotland had been the favourite gathering ground for the Roman arena, and as late as 1057 the Gordons gained their crest by the slaughter of a savage bear. As they were noxious to flocks and herds, and valuable as food and raiment, man employed his utmost ingenuity in their destruction.

The Swiss shot them with poisoned arrows; others hunted with big dogs, and the Grand Cham of Tartary trained leopards for the work.

Ælian says they were caught in nets or nooses, and, while entangled, their heads and bodies were held down by forked branches, and they were bound and put into cages. This forked branch method was universal and permanent.

In Russia, where the beasts were, and still are very numerous, a tribe of Sarmatians, three thousand or four thousand strong, would silently surround a wood. At the sound of the trumpet, every man made a hedge of the bush in front of him, so that the whole was soon enclosed in an impassable fence, whereupon men chosen for the purpose entered the enclosure and pegged down all the bears.

Bears are fond of berries, and trip-bows were set to wound them, and the hunter in ambush finished the work. They were still fonder of honey. A pit would be dug round the hive, and filled with sharp-pointed wooden stakes, over which there was a light brushwood cover; or a tree would be sawn

that contained a hive, and the sharp stakes fixed to catch the marauder when the tree broke under its weight. Another brilliant conception placed honey in a hole in a tree too small for the creature's head to pass. The bear enlarged the aperture with its claws, but, too eager for discretion, forced in its head at the earliest moment, and, unable to withdraw it, became a captive. The bears in America to-day fall to the same stupidity, licking molasses from a barrel fixed with inturned nails.

Pliny speaks of bears killed in the Roman arena by a blow on the head with the naked fist. Bears were fearless of children, it was said, and delighted in playing with them. The cute peasants of Auvergne joined these two weaknesses as a cunning means to Bruin's destruction. They sent forward a boy with a satchel full of dust and a cudgel, to whom the bear, seeking a playmate, came at once. The youth, at an opportune moment, threw dust in its eyes and stunned it with the cudgel, whereupon the hidden hunters rushed forward and killed it.

This story, which makes such serious demands on our credulity, is useful as evidence of the general peacefulness of bears, and gives point to the Russian folk-tales in which they are invariably the stolid and stupid butts of the peasant.

That these tales are a gross slander will be apparent to any one who has seen a show of trained animals, wherein the thinking parts fall always to the bear.

Few animals except monkeys are so intelligent;

none play so well together, none learn untaught so many tricks, and none are so susceptible to education. Bears have a sense of humour, too, which is the success of many an exhibition. And their intelligence has still stronger testimony from their native lands. The Norwegian, Olaus Magnus, notes their appreciation of soft, sweet music and dislike of discords. He marvels at their quickness in picking up the cadence of a dance. Their performance finished, they take round a hat or plate, and if not satisfied they ask for more. That they do not understand the value of money does not disprove his statement—they show equal intelligence by appreciating the shape, colour, size, and quantity of the gifts that will satisfy their masters. And this is only a minor measure of their skill and usefulness. One can but reprobate the cruelty that blinded them with the glare of an incandescent basin and condemned them to run in a wheel to act as turnspits or drawers of water from the well. They were also treated humanely; broken to harness, they drew sledges loaded with goods, and, what always excited the admiration of strangers, they took them off and stacked them in well-ordered piles.

They were playthings in many houses, but never to be trusted. They were always classed as "wild by nature," a legal dictum that had far-reaching consequences, for if they broke loose and ran away, their owner was not responsible for any damage they might cause; they were his property no longer—they belonged to any one who took or killed them.

They were much favoured as buffoons and merry-makers in the rough and boisterous courts of the Russian nobles, and provided an efficient and amusing form of torture which set the victim in a darkened room just beyond the clutching claws of a savage bear.

Few sports have had such a great and extended popularity as bear-baiting. The Romans imported their bears from Britain, and the sport can be traced in England to the Conquest or beyond. Queen Elizabeth was so enamoured of it as to prohibit, by Order in Council, plays to be performed on Thursdays, "because bear-baiting and such pastimes had usually been practised." In 1623 Mr. Chamberlain writes to Sir Dudley Carleton thus: "The Spanish Ambassador is much delighted in bear-baiting. He was last week at Paris Gardens, where they showed him all the pleasure they could with bull, bear, and horse, besides jackanapes, and then turned a white bear into the Thames, where the dogs baited him swimming, which was the best sport of all." Innumerable public accounts show the sport to have been equally popular everywhere. A town in the north sold the church Bible, it is said, to replace their bear, which had died just before the wakes; and there is a saying at Beverley, "It is better to go to a bear-baiting than to Mass," which had its origin in the fall of a chapel roof, whereby the fifty-five communicants were killed, but the thousand at the bear-baiting outside went scatheless.

An angry bear attacks with open mouth and

striking paws; the whining beast hunched up, its head between the paws in a position that stamps as ludicrously apposite the saying, "As surly as a bear with a sore head," is probably enjoying life in its own care-free way; and it sucks its paws as a baby sucks his thumb—for pleasure, not for sustenance.

The ancient writers, who state the contrary, had in mind perhaps a picturesque description of a meagre diet for the bear, surfeited with the fruits and honey of abundant autumn, to which fasting and hibernation was to them not a cause but a rigorous corrective applied by every bear as its own physician. The gluttony and love of honey that exposed the bear's snout and eyes to the stings of bees became by the same reasoning the surgeon's authority to ease weakness of the eyes by copious blood-letting.

These strange ideas are not so curious as the firm belief that the bear moulded her cubs to ursine shape from formless clods of flesh.

Why such a fiction, too bizarre for any vagary of wild imagination? Simply because it had a basis of apparent fact. Bears cub during hibernation: the cubs are very small at birth, and therefore those taken from the female in the ante-natal state were much like a sausage. Bears are fond of licking; the cub first seen was formless, the later one well formed; none but the mother had touched, nor even seen it. Therefore it follows, the mother licked her cub into shape.

22

CIVET

OF the large class of mammals known to the ignorant by the title, correctly vague, "bush cats," that inhabit the warmer portions of the Eastern world, none are more numerous, more widespread, nor from their habits and associations more worthy of study than the civets and related genets. Living in the midst of population, they have been, and are, a mystery, for Nature made them in a cunning mould. They are pretty creatures, for the most part marked with broken bands of black, or spotted; long in body and low on the leg, as befits animals adapted with one exception to an arboreal life. This African Ground Civet, found from Abyssinia southwards, the largest of the group, is some three feet long, and perhaps one quarter the weight of a hyena — that African Wer-wolf whose demoniacal laughter was held to lure the solitary traveller to a horrid death. In form unlike, they have in common black spots, erectile dorsal crests, and both possessing that strange shape of Nature well named hermaphrodite, in legend they have grown confounded. Such a beast was marked for ancient alchemy, for philtres and love potions, for powerful magic, evil or divine, and Nature with the work provides the means.

This civet is still the centre of an important industry in Abyssinia; it has always been known by this name to our zoologists, in contrast formerly with zibeth, its arboreal brother from the East; and as the perfume was called Zebad or Zibeth = froth, we may well conclude that these first provided the scent which came to Europe, probably with the Crusaders, and that they were the animals that appeared soon after in the regal and ducal collections in the West.

"Molt seroit malvais au cive Li connins que li furions chace" (It would be very bad for the civet if the rabbits could hunt him) appears in a French fable of the thirteenth century.

We find the ladies particularly solicitous for their comfort; their room was heated night and day, they slept in cloth-lined boxes on soft cushions. A little raw meat helps the yield of perfume, and it is amusing to note how the keepers, sure of the chatelaine's sympathy, enlarged upon this fact. Two civets of the Duke of Lorraine at Nancy in 1505 were debited from September 20 to December 31 with 135 legs of mutton, 6 chickens, 3 hens, veal and mutton fat, besides rice and tallow, at a cost of 37 francs 7 gros 3 deniers—about £25. Of course there was a row when the fraud was discovered; afterwards the keeper was allowed £60 a year for their keep and his salary, roughly the sum allotted in 1476 to Jean Bidet, keeper of the civet to the King of Sicily, who received about £45 annually, which was more than double the amount

allowed for the keeper of dromedaries and their food.

The Chinese, who had a civet industry in the days of Marco Polo, used leeches to extract the perfume. In Egypt and the south and west of Europe where civet-keeping was almost universal and the making of perfume was in some places a great industry, the method of extraction was totally different. The animals were placed in narrow wooden cages, in which they could not turn round to bite, and the hinder parts being drawn out, the secretion was collected twice weekly in an iron or wooden spatula from the two anal sacs, which are about the size of an almond. At first a yellow viscous fluid, it quickly darkens and thickens to the consistency of pomade. Its appearance is disgusting. As Touchstone says : " Civet is of a baser worth than tar, the very uncleanly flux of a cat." When unadulterated the smell is repulsive, and so potent as to cause bleeding at the nose, yet, properly diluted and mixed with other scents, it is very pleasing ; more floral than musk, it is a necessity in imitating the scent of certain flowers. Both civet and musk are mentioned in the satire on perfumers in *Le Miroir des Français*, 1582 ; our own countrymen seem, like the Javanese of to-day, to have scented their dress with it and anointed their bodies. Benedict is so described.

Don Pedro. He rubs himself with civet, can you smell him out by that ?

Claudio. That's as much as to say the sweet youth's in love.

—*Much Ado about Nothing.*

Two centuries later this scent, so abhorred of Cowper, was still popular.

> "I cannot talk with civet in the room,
> A fine puss gentleman that's all perfume;
> The sight's enough, no need to smell a beau
> Who thrusts his nose into a raree show!"

Now it has fallen into desuetude, replaced by drugs less costly than £2 per ounce, but keepers of zoological gardens still get a few gratuities for collecting it.

Whether it has left its name in the culinary art, or been introduced there by similarity of sound is a moot point. *Civet-de-lièvre*—the French equivalent of jugged hare—certainly owes a little of its flavouring to the scent, but *la civé*, or homely onion, is a strong competitor for the honours of the stew.

What is the value of the odour to the civet? It is not protective like the filthy exhalation of the mephitic skunk; the civet has no glaring colours to warn an enemy of a coming danger—his coat is protective rather—he fights face to face; the other squirts his pestilential odour backwards, and the memory of it makes dogs move away when they strike his trail, and *per contra*, they will leave any hunt to follow the new tracks where the civet has crossed. Whence it seems reasonable to deduce a sexual advantage to the civets, and a guide to the animals moving through thick undergrowth or in the branches of very leafy trees.

The African civet is very active in daylight;

the others are by preference nocturnal. All are very catholic in their food—snails and beetles, eggs and birds, and such mammals as they can overpower, including the young of goats, and in Africa of antelopes, wherefore they are vermin to the game rangers.

They are everywhere a great nuisance to poultry-keepers, killing far more than they eat, and carrying off the fowls one by one while any remain in the roost. The robber is often caught in the compound or poultry-house, or in a box trap baited with a fowl. The arboreal species are also taken by head or foot in a running noose, while the others find a special danger in the wicker traps of the West African native, which, built in series sometimes half a mile long, have neither catch nor fall, relying for success on the narrow, tortuous entrance through which the animals cannot find their way back to freedom.

The whole genus is very fond of fruit: the African seeks the red fruit of the Mfrafa (*Zizyphus mucronata*); the Javan is so partial to the coffee berry and so fine a judge of the best fruit that new and valuable plantations are established by its involuntary help. Suitable food is easily provided for captive specimens, ripe fruit is the secret of successful keeping—almost any kind will do, but there is a decided preference for bananas, oranges, and plums, which they seek with feverish activity and swallow greedily in huge gulps.

They are hardy beasts, that support our climate better in the open than in warm rooms, provided

their shelter be dry and draught-proof. With proper care they live ten years or more, and as they are not expensive, zoological collections are rarely without them. Little ones, dull replicas of the adult, rarely survive importation, but many were bred formerly in Holland, and a few are still raised in this country.

In disposition they are not as a rule familiar, but the writer never found them savage, and Belon mentions one brought up on the bottle at Cairo in 1544 that could be trusted to nibble the hands, ears, or lips, without injury. The Consul of Florence at Alexandria had a civet equally tame, that had been brought up on the human breast.

Closely allied to this group are the Paradoxures or Palm Civets of Hindustan, often called toddy cats, from their liking for the palm juice or toddy which is collected by the natives in open jars suspended from the trees. The single African species is a spotted animal with a simple peculiarity by which it can be easily distinguished, namely, a light dot on the shoulder, whence the scientific name "Binotata." The tails of all this group are long, carried in a slight curve clear off the ground; but when diseased the tail may turn upwards and curve over the animal's back. To a specimen of this kind the species owes its quite incorrect name, "Paradoxurus," and the equally incorrect idea that the tail is prehensile.

The Linsang, the Delundung of the Malays, a dweller in the Malacca Peninsula and a true civet,

is built in quite a different mould—the jaws are long and slender, the body likewise and suggestive of the serpent, an illusion intensified by the bright yellow oblong patches that furnish a most distinctive coat. The legs are thin and strong, longer than is usual in civets. Very few reach captivity and still fewer thrive there. Sir Stamford Raffles possessed a pair early last century in India and found them tame and amusing. There was one for two years or more at Belle Vue, of moderately gentle disposition, that was sold to the collection as a Mexican cat.

The Fossa, the little known civet-like animal which is found only in Madagascar, is of a uniform brown colour and generally longer in body, and lower on the leg than the civet, to which it is related. Like all rare animals, it is reputed very fierce. One, a female, kept in captivity in Staffordshire, killed a big African civet, to which it got access by accident. This fossa was a bundle of contradictions, but so few are imported that no safe deductions are yet possible ; it was extremely fierce with all strangers, knew and tolerated its owner and attendant, was perfectly tame and playful with the lady who first had it, and had retained both remembrance and affection after an interval of years.

An inhabitant of a country under the Equator, it lived in this country by preference in the open air, even in wet, cold, windy weather, and a hard winter which took two inches off its tail by frost-bite had no effect on the animal's general health. It was to a large extent carnivorous, it fed largely

on flesh of all kinds, and played for some time with the fresh-killed bodies of rabbits and poultry before eating them, and it was an adept at killing rats, of which it was very fond.

The whole group of civets are fond of these rodents, but they cannot be indulged with impunity; many deaths have followed what may be to the smaller or less robust animals too large and stimulating a meal.

This applies equally to the genets, which, being more easily tamed than the others, have been kept in the East and in Europe from very early times, as household pets and foes to mice and rats. Their savage instincts are not sated, however, by this kind of food. They are fond of young chickens, and full-grown fowls which are safe from cats are not safe from their attacks. A few centuries ago their skins were classed with the lynx and ermine as the most valuable furs.

23

A BORN FIGHTER

ICHNEUMON the Tracker — *alias* the Bird— *alias* Pepper and Salt—*alias* Water Wallower —*alias* Little Hercules — the world's champion feather-weight for twenty centuries, patronised by philosophers, priests, and publicans, protected by

the most powerful potentates, and petted by the children of princes.

His wonderful prowess that has been sung by poets since the birth of time, proceeds from the perfect balance of his parts, joined with indomitable pluck and inconceivable impudence ; he will tackle anything from a caterpillar to a camel, but concentrates on crocodiles and cobras.

He relies for success on the sharpness of his round bright eye, the taut steel muscles of his legs, and the short, strong, sharp teeth that snap and loose with lightning speed, or stick with bulldog grip. When he chooses to freeze, nothing can shake him off. His furious foe may dash him to and fro and batter him on earth or stones. All is vain ; he will remain unconquered, or, if beaten, but a lifeless body remains as the victor's prize. And rarely is he conquered ; as a rule the victim wearies with his weight, rests for a moment, and the rest is fatal—with a twisting motion of the jaw the little fighter works upward to the neck, and with a crunch breaks through the spinal cord.

This is his way with snakes, chiefly the poisonous cobra. Such a fight is a wonderful sight. A small beast, scarce four inches high, matched single-handed against a foe whose touch is death. Aristotle says that he calls his friends to help him in the fight, but the great sage was mistaken in the meaning of that little squeak : it is not a cry for help, but the whistle of eager excitement. Nor does the little fellow possess the wisdom that has been

accorded to him for so many centuries—elevating his tail as a mark to the foe. Tactics he has in plenty, but they are all based on speed and courage —facing the swaying malignant head towering a foot above him, his tail is flat along the ground. Then what a series of springs too quick for sight—to right, to left, back and again forward, waiting for the chance to pass that down-darting head, the poisoned tooth and death.

At last it comes ; he is past and, with the speed of thought, forward again to fix his fangs too high for the head to turn and touch him. And so to the end ; in this swift leap does his tail turn to some purpose, twisting to baffle the snake to flout its stroke ? The ancients thought so—and still we do not know.

They had many other ideas far too strange for imagination's manufacture, unhelped by sober fact. Why should they call this lover of the dry and cosy, this early victim of a too damp bed, " the Egyptian otter " ; affirm that he took the snakes to water, drowned them there, and, most strange of all—and stranger still the source from whence it came, the sober sage of Greece—why did they dress his lithe body in the impenetrable armour of sun-dried mud ?

Are not all these ideas a misapprehension of a single fact. The Ichneumon that they knew was from the banks of the Nile, where all the teeming animal life collected and followed the receding water over the drying mud. Small wonder if a snake were

THE GAMBIAN MONGOOSE

[illegible] mon attacking a Sp[illegible] his *Ortus Sanitatis* Mainz 1491

finished sometimes in a shallow pool, or a slip on the treacherous footing coated the mongoose's stiff hairs with slime and mud.

Mongoose is another *alias* of the little warrior; it records the animal's Indian name, and from him has been transferred to a creeping plant of bitter taste which he was supposed to eat as an antidote to poisonous bites. The name is new, but the fact is very old. Aristotle tells the tale, but makes it rue to which the weasel repaired in the fight with the Basilisk, that figment traceable to the Cobra or Cerastes (the Horned Viper), perhaps to both.

Why did they—why do many people—still believe in this ancient fable? A cobra kills a man in a few minutes—a few moments would be enough to paralyse this other creature. Can the statement be true with another meaning? All small carnivora are fond of sweet fruits; perhaps they eat bitter ones also, and what more natural than this healthy corrective to a little body gorged with the flesh of his vanquished foe.

Poisonous snakes are the speciality, but the little Ichneumon was honoured and worshipped as a god in ancient Egypt for service against crocodiles. What wonderful tales travelled across the sea to Europe—the wily little fellow watching with sidelong glance the sleepy crocodile; if it yawned—woe to it—down the cavernous throat he slipped and ate its vitals. Some said the mongoose waited until the great saurian swung open its huge jaws that the

Trachilus (Egyptian Plover) might clean its teeth of leeches—but, in any case, in went the beast.

It was a fairy tale, not to be blamed on the Egyptians, who knew and simply said that the mongoose sought and ate the eggs of the crocodile. It may have a basis of fact in the eating of the entrails of a dead reptile, for the mongoose is an omnivorous feeder, as the world now knows to its advantage, and to its cost.

They were called Pharaoh's Rat, as one might say the King of Rats, for they were the insatiable enemy of all pests. They were the household guards against snakes and rats where both abounded, and they are so to-day in the East. Taken thence across the world, they saved an industry and opened a new problem. Nine mongoose were liberated in the West Indies in 1872: in two years their progeny had the rats in check; in ten years the plague had been conquered and over £150,000 a year were saved. The rats that remained were few and wise; they took to the trees and were safe. The starving mongoose turned to the poultry, to the exasperation of the farmer, and, to the annoyance of every one, began to prey on lizards that feed on the larval mosquito. Now that Darwin's famous story of the more spinsters the more honey has taken the unpleasant turn of the more mongoose the more mosquitoes, a price is on their head and the scientists have a new problem.

For their ratting qualities, in which they are far superior to cats, dogs, or ferrets, they are used

in England, particularly in Manchester — owing somewhat to the writer's action. This was some thirty years ago, and now most large establishments have this useful guard. They are little seen or heard of, they work less well if petted. When the Athenæum in Manchester some time ago noted this fact, the Committee issued a notice asking members not to feed the "mongooses." Such an error of a high-brow institution attracted the attention of many people, and led to a long and learned correspondence in the *Manchester Guardian*, which came to a sudden end with a letter from the writer which was founded on fact. The purport was as follows:

"The snake-keeper from Belle Vue received a request for his immediate attendance at the Prince's Theatre to save the show. Fortunately he was at hand and willing to oblige—the need was urgent; the ladies of the ballet absolutely refused to dress in the presence of two *mengeese*."

What's in a name? In olden days this petted servant of mankind had other names and qualities innumerable; he was a water serpent, and a pig, for pigs eat snakes, and as pork is often dangerous, and what kills poison in snakes may kill it elsewhere, he became a sanitary smell good for fumigation, and a preservative of pork. Boring into crocodiles he became a sort of wasp, like the Ichneumon Fly, and finally he was mistaken for the snake. Killing ibis, he became a bird, an eagle sacred to the strong god Hercules.

All these are errors sprung from information

uncomprehended ; where ancient writers spoke with knowledge they told us what is profoundly true.

" The mongoose is a dear pet—he cannot stand cold, he loves to curl up in your lap or bosom ; he fights like a devil, he does not fear the biggest dog, and as for a cat, three snaps and it is finished."

24

THE LYRE BIRD

MANY Australian birds are gorgeously plumed ; most are poor in song. The Lyre Bird is a marked exception. Rather small, not unlike a Bantam cock, with a long, thin neck, long legs and toes, and rather long and pointed wings, and a tail profuse and wonderful ; there is no beauty in its coat of sober brown, suffused with reddish shades, a protection from its woodland foes and useful against unappreciative small-minded brutes, not always of the lower animals. The bird is compact and inconspicuous, its tail is profuse and wonderful.

The tail is his advertisement, which, like an honest entertainer, he does not display in the full perfection of its lyre-shaped plumes until he has attained the full perfection of his powers. The Lyre Bird is the Low Comedian of the wilds ; he can whistle and dance, is a born mimic, and, like our own corncrake, is something of a ventriloquist. While he is

practising, his coat is sober and his tail is short. How long he works no one quite knows—four years at least, probably longer, if we may judge from the only valuable evidence, the observations of a schoolboy, S. M'Neilly of Drouin, who kept one tamed over eleven years. This bird was like the hen until the seventh year, then the tail grew and annually increased until the Lyre-curved plumes were twenty-nine inches long. When prepared, his repertoire is extensive and peculiar; his own liquid notes are clear and shrill, he adds the voices of all neighbouring birds and any extraneous sounds that take his fancy. One humorist, domiciled near a sawmill, imitated the dogs, cats, and hens, the human voice, and the awful screech of a sharpening saw. This is done solely to call his lady that he may woo her in a dance, and to make the performance more attractive he has cleared in advance a little mound; and on this stage he makes his bow and trips and dances in all his finery, the long, shivering plumes reflected forward almost to his head.

Each male possesses his own little mound—they fight like barn-door cocks against intruders; the girls go round and choose their own. The mated pair construct a rounded nest, deep hidden in some fern-filled gully, and an egg is laid towards the end of June. The hen incubates alone; the pair protect the chick until the year has sped. It is a curious little creature, the body covered with lengthy down, all sooty black, and thickened at the head to form a cowl; the throat, flanks, and thighs are nearly

naked; the tarsi, toes, and nails are very feeble, which is a strange beginning for a bird that is to live by running.

To these many wonders we may add another. The Lyre Bird comes from Australia; when our illustration was produced that island continent was not known in Europe.

25

THE OTTER

PISCATOR. "I pray, honest huntsman, let me ask you a pleasant question: Do you hunt a beast or a fish?"

HUNTSMAN. "Sir, it is not in my power to resolve you; I leave it to be resolved by the College of Carthusians, who have made vows never to eat flesh. But I have heard the question hath been debated among many great clerks, and they seem to differ about it, yet most agree that her tail is fish; and if her body is fish too, then I may say that a fish will walk upon land."

—*The Compleat Angler.*

THIS is a gentle, humorous dig at the easy consciences of the monks who thus contrived to ease the Lenten or the weekly fast. But was it really fraud? When monasteries first were founded, the belief in dimorphic or still more complicated creatures was general, and no mistake could be more easily justified than the amalgamation of this beast, rank with the flavour of marsh and fish, and the eel that resembled so closely its slender "pole" (*i.e.* tail).

Structure shows the Otter as one of the weasel race, and an interesting link in a chain of adapta-

bility from the tree-keeping beech-marten, through the stoats and weasels that sometimes swim, the water-loving minx which is terrestrial in winter, the otter, and, lastly, the aquatic, fish-eating seal. The otter will eat frogs and voles, and under stress of circumstances may even raid the farmyard. But the staple diet is live fish, captured in fair chase, with many a lithe and sinewy turn. Sometimes it captures two or more in a single dive, but it cannot eat them in the water. Fishermen in Europe in the Middle Ages, and in the Far East, then and now have turned this natural necessity to account. "They are tethered by long cords fastened to a straw collar," says Bishop Heber of Calcutta, who saw a group of twelve so fastened, "and are employed to drive fish to the nets, though they occasionally catch them themselves." A big straw collar would impede the otter's activity, but would be less likely than leather to slip over the small head of this active animal, and would be a protection for any one handling such a vicious, sinuous beast.

Thompson, referring to the same subject in his *Malacca and Indo-China and China,* says: "The fishermen on the Yangtse-Kiang stamp on the otter's tail to make it drop its prey."

Most otters are savage and unreliable, but there are a few recorded instances in remarkable contrast. Captain Barkley, of Huntingdon, had a cub of ten weeks old that agreed with the dogs in the house and played with his little son. M. Pays Mellier, a well-known member of the French Acclimatisation

Society, recently possessed one, unique among the number he has trained, of unequalled tameness and fidelity. It was a fireside pet, joining in the roughest "rough-and-tumble" with his children without resentment, and accompanying them like a dog. In the water it played and rolled and dived for their edification, or perhaps from vanity—a potent force with animals—and always brought the spoils of the chase to lay them at its master's feet. Buffon doubted similar tales brought to his notice, and he doubted, too, the otter's supposed intelligence in always hunting up-stream that it might float easily home when tired in the chase. That this manner of hunting takes the fish in the rear is a quite simple and sufficient explanation of the point.

The Marquis of Courtrivon gives a charming description of a tame otter that belonged to the lay sisters of the Abbey of St. Jean le Grand, at Autun, in 1775. They had reared it on soup, vegetables, and kitchen scraps of all sorts; it would not touch cooked fish, nor raw, if not freshly caught. It slept on their beds at night, and by day in a chair. There was a bowl of water for its especial use, wherein it would dabble its head and shoulders. It answered to the name of "Lou-Lou" (*loutre* is French for otter), and would follow the marquis. One day he took it to a large lake, but it seemed positively afraid. It would dabble its forequarters only in the water, and when flung in made for the shore in the greatest haste and fright. This seems like the famous fish story of the herring which was accustomed, by

THE LYRE BIRD. *Chapter* 24.

Right. The *Gallus indicus* or Lyre Bird in the Natural History of Aldrovandus of Bologna, 1599.

gradual diminution of water, to live on dry land, until skipping along after its master one day on Blackpool Pier, it slipped through the nicks and was unfortunately drowned. But the writer believes it. There are many things as curious. Penguins which receive meat on the voyage from the Cape are only taught with great difficulty to take fish again. The seal teaches its young to swim, and so does the otter. A friend of the writer witnessed the act recently in North Lancashire. Seated on a brookside, he heard a shrill whistle, and a bitch otter appeared with two cubs on the shingle. There they played for a time until the mother, manœuvring one of the cubs to the brink, put her nose under it and threw it far into the water; she then dived in and guided it safely across. She returned for the other, and after an interval of play treated it in the same manner.

Soon they were quite happy in the water, exploring all its opportunities of fun and frolic; but they could not get more than their heads below the surface—their bodies floated like little air-filled bags. Diving was another and a necessary lesson; the bitch, taking them singly as before, swam into deep water and sank with the cub to the bottom, and there she left it. The lesson was repeated, and then came the turn of the other, that had been attempting meanwhile to imitate the new manœuvre. The cubs accepted all these strange antics of their mother without fear or displeasure.

Professor Hobhouse, deducing from his experi-

ments for *Mind in Evolution*, considered the brain-power of the otter as quite equal to that of the dog or elephant. Where they are numerous—and few animals are more widely dispersed than the otter—they know how to hunt in concert, to drive fish into a land-locked bay; and they use their intelligence so well, and are so completely nocturnal in populous places, that they are sometimes numerous where their existence is not suspected. On the Clyde their numbers are increasing. Two full-grown specimens, 3 feet 6 inches and 4 feet in length respectively, were caught in April 1905, in the old Gasometer Pit, Waterside, Disley, Cheshire, and the local game-keeper did not know what they were. A couple are nearly always lurking by Bramall Hall, Stockport, with its fine lakes, and would, no doubt, be encouraged if they took but a fair quantum of fish; but otters are very destructive, killing far more than they eat in well-stocked preserves and leaving mutilated fish to die. A price of 5s. or 6s. is often placed on their head, and they are shot at sight or taken in steel traps placed below the waterline at the bottom of the play-slides that they make on steep mud-banks.

Otter-hunting is exciting sport. The dogs are similar but of heavier build than foxhounds, and follow their quarry into the water readily enough, but rarely kill there. The hunt follow along the banks, whence they used to transfix the beast with their three-fringed otter grains. This barbarous custom having fallen into desuetude, the followers must now wade in and make themselves useful. The

otter swims down stream, and the huntsmen's aim is to head it up again. This can often be done by a party joining hands across the narrows below a pool and splashing. The more adventurous seize the otter by the tail as it tries to break away, and throw it on the bank; this is a deed of great merit among the fraternity.

Punch gets the outsiders' point of view well enough when the irate Major meets the Master's excited "Head him! tail him!" with the irascible "Hang it! I've not come here to play pitch and toss."

Where fish are of high quality and scarce, the otter may be a reprobated pest, but in the fish-swarmed rivers of warmer lands it is one of the few wild creatures without a fault, one of the good gifts of God, a destroyer of pests, a preventer of pestilence, a rare and holy being.

Their origin merges in the miraculous. In the central parts of Asia, in the lands where Persians, Kurds, and Hindoos held sway, there were Bread-dogs, which lived on land, and Water-dogs. From the ghosts of every thousand dogs and bitches of the Bread-dog sprang two, a male and female of the Water-dog (or otter).

In the Zend Avesta, a sacred liturgy of the Persians (*circa* A.D. 50 to A.D. 400), it is written, "He who kills a water-dog brings about a drought that dries up pastures."

This is still a current belief, and with it is incorporated the very important observation that the death of otters brings frogs to life.

The penalties for killing an otter are fifty in number; among them, and by no means exceptional are the following:

He shall pay 10,000 stripes with the Aspahé astra.
10,000 stripes with the Sraosho-Karana (*i.e.* cash=60,000 rupees).
He shall kill 10,000 constricting snakes.
10,000 poisonous snakes.
10,000 tortoises.
10,000 frogs.
10,000 corn-carrying ants.
10,000 biting ants.
He shall procure and provide a rill of running water, the depth and breadth of a dog.
He shall treat twice nine godly men to their fill of meat, bread, strong drink, and wine.
If he shall not make this atonement to the soul of the Water-Dog, he shall fall down into the world of the wicked, into that dark world, made of darkness, the offspring of darkness.

Means of evasion must have existed, but the temples got rich with the first penalty, and the regulation guests are not likely to have waived the last. "But why," one may ask, "was there such terrible punishment for killing a small animal?" The reason stated is merely a deduction from the real cause, which, according to the existing beliefs, was of the highest sanitary importance.

Of course there was a drought when the holy dog was dead; the water was required no longer and was withheld. The water-dog was holy, not by its miraculous birth, but from the fact that it killed frogs. Of the five terrible scourges of India,—rodent vermin, ants, locusts, snakes, and frogs—the Frog in the water is the chief. It marred the water, made it the home of cholera and pestilence.

The murder of man's protector exposed the whole nation to unexampled evils.

There, at least, no otter can have trembled for his skin.

The best otters from North Europe yield a dressed pelt about four feet by two feet, and are worth from £2 to £4, according to quality. Brazilian otters are very much larger, and had a high value for the felt hat trade. Competition, with its attendant adulteration, has ousted them in favour of the coypu—a large aquatic rodent whose fur, marketed as "nutria" (Spanish for otter) at 1s. 6d. per lb., is itself being ousted by rabbit and other substitutes.

About equal in size to the Brazilian, but in other respects far superior, is the sea otter of Behring Strait. Steller, the Russian naturalist, when on the Aleutian Islands in 1786, found the young sea otters tender and comparable to veal, but the old were too tough to be masticated. He records their habits in full and interesting detail. They are big and strong enough to face the roughest seas with pleasure, and the mother, lying on her back, suckles her offspring in the trough of the wave. But they are not piscivorous as other otters, feeding rather, as their dentition shows, on mussels and clams, which they crush between flat-crowned teeth. Numbers are snared on mussel-beds in nets they might easily break were they not too timid to struggle, or are knocked on the head by adventurous Aleuts on stormy days on outlying reefs, where they are found in the kelp sheltering their heads from the

wind. In calm weather there is the still hunt of many canoes. As soon as an otter is sighted on the water, the nearest hurries to the spot, the rest spread around about half a mile, watching until the otter rises from the dive. Then the nearest canoeist again dashes up, seeking to throw a spear before the animal dives, and so the chase continues until the exhausted otter is transfixed.

The race could have easily endured such persecution, but with modern firearms the Aleuts shoot them as they roll and play in the surf a thousand yards away, the roaring surge covering the crack of the shots, and they are now fast disappearing.

The Aleuts live entirely on the produce of their furs, the most valuable on the market. In Steller's time they fetched £10 apiece; a few years ago a friend of the writer was offered one for £100 on the coast where they are found; the demand was very reasonable. The value lies in size and colour; the best are jet black and six feet by two feet. As the skin of a common otter measures about four feet by two feet, the reader can form some idea of the extraordinary shape of this one. A sea otter in Berlin Zoo, the only one the writer ever saw alive, left the impression of an abnormal pair of webbed feet fixed at the end of an amiable length of stout, flexible hose, covered with the softest, thickest brown fur, denser than the finest sealskin.

26

MEGAPODES

"BIG feet," the generic name of a large family of birds, distinguished only by their curious nesting habits. They are found in the islands of the East Indies and in most parts of Australia. The largest variety are somewhat similar to a hen turkey, and for that reason they are often known as Brush or Mound Turkeys in Australia, while the smaller variety is named the Lowan or Mallee Hen, and Native Pheasant.

The male birds build a huge mound of decayed vegetable matter, in which the eggs are deposited. The materials, grasped in the foot, which is very large, are thrown back to a central point to form a circular heap about four feet high. When fermentation has raised the temperature to ninety-six degrees or thereabouts, the hen bird is allowed to approach, and scraping down about one foot, she lays her egg and departs. The cock bird scratches a few leaves into the hole and tramples them round the egg, which he first places in the regulation position, the larger end uppermost. Then he fills the hole with more debris. Other eggs are laid around it about nine inches apart, until the clutch of eighteen is complete.

During incubation, which lasts about thirty days, the pair are in constant attendance, opening the

mound during rain and closing it immediately afterwards. The chick is hatched with a shiver and struggle which bursts the brittle shell in pieces. It is fully feathered and sufficiently strong to scratch a way out of the mound and fly into a tree if danger threatens.

Often several pairs unite to construct a common mound, which may be several yards in circumference, and may contain fifty or sixty eggs, that hatch at irregular intervals. In such cases one mother attends to all the chicks that hatch on any particular day; they only need her assistance for a very short time.

The nests are usually placed in shady spots, often under cover of low-branched trees, but the birds will work in more exposed situations. The writer has seen a mound constructed on an open spot in a shrubbery in an English park. The birds usually prefer a flat base, but as they seem to throw by instinct downhill, this aviculturist had provided a sloping ground completed by a wire fence, which helped the speedy construction of an imperfect but effective mound in which eggs were laid and hatched.

Zoologists have discovered also that the birds are not unwilling to adopt and complete a heap of refuse suitable for their purpose, and by this means the breeding of the race in captivity has been much improved.

THE ZEBRA OF LUDOLPHUS

From Ludolphus, "A New History of Ethiopia," 1682.

27

THE ZEBRA

THIS beautiful creature is one of Africa's most numerous game animals ; herds of a thousand head are yet to be found, and troops of a hundred or more are very common. It is often seen in company with hartebeest and other antelopes, and attracts to itself domestic horses, and particularly mules, with an almost irresistible force.

The troops are the prey of the lion, and live in a state of continual nervousness, which may explain those sudden panics to which they are so prone. Under their influence they dash headlong, crashing through fences and trampling down the crops, and for these reasons they are cordially hated by the white settlers, who take every opportunity to destroy them.

Their reputation for stubborn intractability is ill founded ; they can be tamed as easily as most animals. They have been used in harness by many peoples over some hundreds of years, and are in regular service to-day in those central parts of Africa wherein the tsetse-fly makes horse traction impossible.

They breed freely with the horse and the ass, occasionally even with both consecutively, though Lord Clive in his experiments had to paint stripes upon the male ass to deceive the zebra. The foals

are strong, and in some cases very handsome ; the stripes are more or less distinct, but whatever the parentage, they tend to resemble the thin lines of the Grevy Zebra, which brings us to an interesting examination of the curiosities of zebra markings and their relation to the asses on the one hand and horses on the other.

Asia is the home of a Wild Horse, the Tarpan, but it is in no respects similar to the zebra ; it is also the native land of many species of Wild Ass, grading from the fawn-coloured dzeggetai of Mongolia through the kiang to the onager of Persia and the surrounding countries and of south Arabia. These animals approximate in their greyer colour and smaller hoofs to the wild asses of Somaliland, which are still greyer and have smaller ears. None of them have shoulder stripes, but a close examination of the Somali Wild Ass reveals a large number of narrow body stripes similar in width and direction to those on the most northerly type of the Grevy Zebra, which adjoins their range. This animal has large wide ears and narrow body stripes curving from spine to belly in a concave direction. Progressing southward the ears grow less and the curve becomes convex, the change taking place in about a hundred miles of distance. The writer has never noticed a reference to this fact in any book on natural history, nor can he say what cause produces so strange a result ; but its effects continue on the fore part of the barrel of nearly all zebras, and invariably on the hinder half, where the curve is so

accentuated as almost to form a right angle on the rump and leg. The change is accompanied by a great increase in the breadth of the stripes which, in the hottest parts of the country, are white and black in vivid contrast.

South of the Zambesi comes another alteration, due no doubt to temperature: the white and black grow duller, and between them comes a shadow stripe of brown, which extends in width as the temperature falls, until at 30 degrees South the body of the now extinct Quagga was a bay colour. Another change was working too: the ears decreased in width and height, the hoof got smaller, the tail more furnished, and thus, except for the striped neck, the Quagga became a Libyan Horse. This is the merest outline of a wondrous chain where every link merged in confusion with those about it, for hill and plain always made minor differences. Can it be carried further? In our mind, yes; the Cape is but the half-way house on the long stage that joins the Asiatic Ass and the fine drawn Arab, fleetest of horses. The zebra loves dry plains and scanty herbage, it avoids wet land and luscious pasture, consequently the great troops of zebra that were found in Angola did not cross the continent, but spread rather from the coast, or at least from some point in the south, where the type was already equine. As the animals spread northward towards the Equator the hot sun would reproduce the east coast characters, but in a lesser degree; beyond the Line the striping would tend to grow

more faint or disappear, as it did in the south. North of the Congo zebras are never mentioned, but there is no reason to think they did not exist, and there is at least one fact to suggest their presence. If they existed, why should not the like causes work the same result and people the north-western coast with a zebroid form more equine than the Quagga, produce a stripeless Libyan horse, the beast famed for fleetness, and so potent in improving every equine race—in fact, the Arab.

The Arab, despite its name, did not originate in Arabia. No Arab pedigree goes beyond the mares of King Solomon, who bought horses out of Egypt. The Arabians in Xerxes' army (480 B.C.) were a camel corps. The Arab king, who made submission to Aulus Scaurus in 62 B.C., is depicted descending from a camel. But a tribe of desert nomads, the Libyans, who roamed the sandy lands from Egypt to the Atlantic Ocean, for many years had ridden on horseback, catching with the lasso and breeding the soft and gentle creatures that needed no spur to make their speed and no bit to curb their spirit. That was 2000 years ago. Some 1400 years earlier still Egypt was relieved from the yoke of the Hyksos, or Shepherd kings, by a revolt of the kings of Upper Egypt, who were always in close touch with the kingdoms of Ethiopia, with whom the desert tribes were in constant intercourse ; and at this very time, harnessed to a chariot of Libyan shape and under a yoke lined with morocco leather, for which these nomads are still famous,

the horse appears bearing the name of Ammon, whose shrine lay far in the Libyan desert.

Egypt spread her territories far and wide, and her commerce, particularly in horses, reached all nations. Her capital was "Thebes of the many chariots," to the envious Greeks who dealt largely with her and served her as mercenaries against the Libyan tribes. From them the Greeks may have learned horsemanship, for in this Egypt never excelled. And from the Libyans the Greeks first obtained horses—"swift horses begotten of the west wind and foaled by a harpy near the shores of Ocean," as Homer sings. The same Libyan strain passed into Assyria and the north, but it missed Arabia, "where," Strabo (A.D. 1) emphatically says, "there were no horses at that time."

One only need peruse the wars of Rome and Carthage to find full confirmation of the birthplace of the horse, which finally reached the south coast of Arabia; probably as the booty of Arab pirates, who waged incessant war on the ships that carried this precious freight to India.

The first definite reference is a gift of horses by the Hamdan tribe, and in the sixth century A.D. a war arose over a mare called Dahis. The Libyans thought little of pedigree, but an Arab will spend his dying breath in telling it to his victorious foe. It is neither insult nor challenge to send an ambassador to ask the lineage of the mares taken from the enemy. The knowledge is a national asset. Warmth in the air is good for wind and speed, and

the horse found in Arabia a perfect paradise and a master that knew his god-sent treasure.

There were five famous breeds of Arab horses when Mohammed began his adventurous career, but he himself had very few horses. When he defeated the Koreish, or infidels, he had but two horses, and there were none among the booty. He was not a horse breeder; of seven mares he had, three he bought and four were presents. He speaks more of his ass U-fair and his camel Al-kas-wa, but he was quick to recognise his new auxiliary and exploit it to the full. "Weal is in the forelock of horses until the Day of Judgment." "The money which one spends on horses in the eyes of God is alms that one makes at one's own cost." His worldly wisdom was amply proved. Before his time Arabia was an unknown power, and only in 631 was it a united nation. In 632 he died when planning an assault on the Byzantine Empire. By 641 Syria, Persia, and Egypt belonged to the new creed, and in 732 all North Africa and Spain was theirs.

The Arabs were great hunters; did they find the zebra in the southern parts of their North African dominions and take it into Spain for the pleasures of the chase? This is more than probable.

In a book, *O Bobo*, by A. Herculano, written in the thirteenth century, there is this reference to the jester (O Bobo) of Count Enrico of Portugal, a member of the Court of Donna Theresa Infante of Portugal, living in the town of Grimarães: "The

jester was intended for the priesthood . . . but ran away from the monastery *like the zebras when they are chased in the forests of the Xerez mountains"* (Southern Spain, on the borderland of Spain and Portugal).

As the monk Sarmiento reproaches the Spaniards, and in particular the Galicians of the extreme north-west, for destroying or allowing to die out the many bands of zebras in the Zebrero, they must have been very numerous and widespread. And they must have reached Spain far earlier than our first date, seeing that Arabic writers in the country suggested that they were indigenous. This is, of course, incorrect; the Romans could not have missed so curious a creature, which was the rarest exhibit in their games, as it was later in the Zoological Gardens of Medieval Europe. It is, therefore, the more remarkable that the Spaniards and Portuguese, who gave many gifts of animals in the fifteenth and sixteenth century, never gave a zebra, and on that account various authors have imagined that the "cebrero" was a wild ass, which, if true, would make a greater marvel. But the idea is untenable, the name is Abyssinian or Arabic; the zebra was the synonym for speed—"Swift as a zebra"—and is so mentioned by Cervantes. And a love story of early date, in which the heroine is a Christian maiden, the hero a Moorish prince associated with a green rabbit and a zebra, tends to prove that that animal came from North Africa, the home of the rabbit, and was introduced by the Mahometans

under their holy green standard. *Proof* definite and irrefutable is supplied by an English traveller, Edward Twiss, who visited Spain and Portugal in 1772–73. At the royal castle of Bellem, near Lisbon, he saw the menagerie. "There was an elephant, two lions, a leopard, and ten fine zebras or wild asses; these latter are in one stable. Some of them were brought from Angola, *the others are natives of this place.* They can never be broken to endure a bit or rein, though it was attempted to enable six of them to draw the Prince of Beira's chariot." There are many zebras in Angola, but no wild asses. No one would trouble to break an animal so ordinary in appearance, and, on the other hand, to drive the beautiful zebra is still an ambition of the wealthy.

The animals were zebras, their flesh was appreciated, and sold at twice the price of venison; they disappeared as the wild camels are doing to-day at the hands of poachers; extermination arrived probably during the Napoleonic Campaigns.

The failure to break the beasts was simply lack of skill in the Portuguese; when the Dutch took possession of the Cape and made a business of zebra exportation, they broke the animals to harness in large numbers, and the men on the spot in Angola in earlier days had a like success and used the creatures commercially. "If any one," says Pigafetta (A.D. 1520), "be in a great hurry, he changes the usual beasts, and with zebras (as post horses) he finishes his journey very quickly."

A BURCHELL ZEBRA

A remarkable specimen, for twenty years at Belle Vue Gardens, Manchester, showing the convex and concave markings in the making. Keeper, James Craythorne.

Why was this animal so rare in the rest of Western Europe in early days? The only specimen known appeared at Naples in the fifteenth century, and it was a gift from the Caliph of Bagdad, and thus must have made two very long journeys. On the other hand, the zebra is found regularly in Mahometan countries — Cairo, Constantinople, Bagdad, Basra—even as far away as India, at the Court of the Grand Mogul. Could it by any chance have been a holy beast? Certainly it was in very early days. Ancient Egypt shows no trace of it, though the giraffe that inhabits the same country was quite familiar to them. The Romans had it on exhibition at the games of Caracalla in A.D. 211, when it made a sensation as the hippotigris. They got the animal but not the name. They stole it.

The Persians, whom the Romans often fought but never overcame, were worshippers of horses and of the sun—the zebra combined the cults, and was sacrificed with great solemnity annually at the feast of Mithra. The collecting-station was an island at the southern end of the Red Sea.

Plautianus, a Roman admiral, made a daring raid in those waters. "He even took from one of the islands in the Red Sea the Horses of the Sun, which resemble tigers," and brought the spoil to Rome.

28

THE MAN MONKEYS

THERE are four species of anthropoid apes, each containing several varieties. Three—the Gorilla, Chimpanzee, and Orang Utan—are the largest monkeys and the most intelligent creatures in the animal world. The fourth—the Gibbon—is an unintelligent, weakly, spider-like exiguous creature, whose hands reach the ground when it stands erect. It runs on two legs better than any of the others, but it has no speed along the ground nor strength to molest man, therefore man does not fear it as an animal. The Gibbon in the trees moves almost like a bird; it is the Ariel of the anthropoids, and as such, as a good or evil spirit, it is much respected by the Malays. It may be their Ngarong, "the secret one," revealed in a dream—the encourager and helper in all serious enterprise; it may be the support of the house, and as such its image in grotesque is sometimes found upon the cross-beams of the huts; but woe betide the wight on whose dwelling the beast of flesh and blood alights; it is foredoomed to fire; no help or hope can come from man or demon—the owner just quits and builds another house. The Gibbon gets respect, the Orang awe and fear. No Malay will look it in the face nor laugh at the hairy giant that can, and sometimes does, throw sticks at them, or stab them with the

javelin wrenched from their hands, or pull down the house and break their heads with their own roof-tree. But, in spite of their intelligence, which is great—the saying that the monkeys can talk but will not is found in Java as well as in West Africa—they do not work the cross-beams into their own shelters in the woods. These are mere leafy platforms woven between two boughs, and, as the writer can vouch, are constructed with marvellous celerity. Standing balanced by one hand, the other must do all the work, and is well fitted for the task. A big orang is nearly five feet high and almost all is head and body, the legs are weak and short; as befits an animal that swings among the trees, the arms are very long and muscular, the fingers so hard that they can twist wire netting that would hold a lion. Almost any branch in the tree-tops must give way to such pressure.

The body is covered with long, lank, red hair. The head is big and egg-shaped; the receding forehead, making a regular sweep from the small eyes, the flat nose, the upper lip swelling to the full prominence of the long slit of mouth, and the receding chin are so human that it scarcely needs the full whiskers and beard beneath the jaw to make a certain type of human face. "Isn't it like Mr. X?" said the small boy. "Hush!" said his father; "the monkey might hear you."

The general demeanour of the Orang is lethargic and contemplative, and it sits with legs crossed in the manner of Eastern peoples. An eminent London

mental specialist traces in it the ancestor of the Mongolian races—fathering on the Negroes the knee-clasping Gorilla and on us the Chimpanzee that sits with pendant legs. The morose nature of the bigger beast and the liveliness, adaptability, and excitability of the chimpanzee help the argument, but there are too many weak links to support so great a theory. Orangs are found on the edges of the forest, often near the sea; they seek shellfish on the shore, where Sinbad saw them, but their home is in the trees; their chief food is fruit; drink they suck from leaves, and the writer is given to understand that the unexampled catch of orangs in the winter of 1927–28 was caused by a severe drought that drove them thirsty to the human settlements. The Dyaks and the Malays have two tales of orangs carrying off human beings—a man, and in the other instance a woman—but the details accord so exactly and are so sensational and impossible that they prove nothing except that the beasts make their nests high in the trees. Chimpanzees as a rule do the same, but a friend informed the writer that he had seen many chimpanzee nests in quite low trees; the female gorilla makes her nest not far from the ground, the big male upon the ground. The bed of the male gorilla is a rounded structure, deep in twigs and leaves—and very fastidious the old man is in making it; one, timed, took twenty-five minutes in the construction, but the result, judging by the photograph, repaid the trouble. This habit of these African apes is of

A CHIMPANZEE AND HER NEST

The only known instance of such a nest built in England; at Belle Vue Gardens, Manchester, in August, 1914.

recent discovery; no one believed it until the writer's female chimpanzee (*T. Calvus*) made her nest at Belle Vue in August 1914. She had been observed to fray a rope and put her rump on it when lying along a beam. To this beam we nailed three branches, in a triangle. On the floor, eight feet below, smaller branches and leafed twigs were thrown in a heap. In two days she had a round nest, with the leaves in the centre, and the whole carefully trodden down. And there she sat, always holding her play rope, which she coiled alongside—one surmises as a means of quick escape in case of alarm. The material was usually carried up under one thigh, though she occasionally carried a branch in her teeth, letting it hang over her shoulder. About every week she threw down the nest and made a new one. No effort was made to roof it, though facilities were provided, to test the travellers' tales. Perhaps she was clever enough to see that no rain could fall on it. Du Chaillu says that the male does the building; evidently the females can do the work.

Du Chaillu's *Adventures in Equatorial Africa*, 1861, is still the best account of the gorilla. Doubts have been expressed of his veracity, but points that can be checked have proved him correct. Its mode of fighting has been particularly criticised. In its habits the gorilla is very like a chimpanzee, and their manner of fighting is known; the writer once umpired a match between Consul and an Anubis baboon, in which the ape only used its open hand

and the other bit. Similarly, when attacking a keeper, chimpanzees first poke with the open hand and retreat, only clasping and biting when this has been twice or thrice repeated. We may take it the gorilla does the same. He has no respect for Queensberry rules, and no man would stand up for the second round.

"Having eviscerated the hunter," Du Chaillu says, "it dented and bent his gun." Why not? It was only a common trade musket. The writer has seen a lion crumple up a bucket like tissue paper; the gorilla's teeth are bigger, his arms far stronger. The fingers of these beasts seem insensible to pain; Jacob, the London orang, in his playful moods, twisted out the strong wire of his cage and escaped more than once. Jacob did not weigh more than 250 lb., if that. Du Chaillu, who never exaggerates the size of his gorillas, said the one in question stood 5 feet 7 inches high. Here are the measurements of a gorilla shot by Herr Paschen, in Yaunds, Cameroon, on April 15, 1900, and mounted in Lord Rothschild's museum at Tring: Height, 5 feet 6 inches; weight, 540 lb.; arm stretch, 9 feet 1 inch—and this one mass of muscle.

Who can estimate his strength? No one can, and the latest writers are wilder than Du Chaillu. Their gorilla, the latest found near Lake Kivu, in Uganda, right up to the snow-line, twists the gun into a corkscrew. That beast was small in comparison. Height, 5 feet $4\frac{3}{4}$ inches; arm stretch, 7 feet 6 inches; chest, 5 feet 1 inch.

If there be exaggeration, it may be found here: "These animals attain prodigious proportions, being at times as much as eighty inches round the chest and sixteen round the forearm, and their height reaches seven or eight feet" ("Captain Philipps' Journey across Africa," *The Observer*, December 24, 1922).

The negroes kill the gorilla for meat. Fearing the ridicule of their enemies, they never keep the young they take alive. Naturalists have the greatest difficulty in getting a "boy" to attend to monkeys. But the natives have no objection to selling them to traders. Bosman prints the perennial joke: "There are negroes who affirm that these monkeys can speak, but that they will not, in order not to work." He also says: "The best thing about these monkeys is that they can be taught everything their master desires." The clever orangs and chimpanzees always owe much of their education to the traders in their native land. The chimpanzee is more nimble than the orang both in mind and movement, yet little superior in intelligence. The gorilla has a bigger brain than either, but it is sulky and morose by nature and requires great love and affection. This fact is now recognised, and several young gorillas have proved as clever and tractable as chimpanzees. John Daniel, the first of these wonders the writer saw in a hat shop in London, was as playful as a kitten; it romped among the latest creations without touching one. Its lady trainer told of many traits of wisdom

—the strangest must suffice. The little fellow loved to sit in her lap, and was on the point of doing so one day when she was dressed for a visit. A lady friend said, "Don't let him spoil your dress," and John Daniel was warned off accordingly. He retired, to return in a moment with a newspaper, which he opened on her knees, and then took his accustomed seat! The animal was sold to a big circus in America. When his friend, Mr. E. H. Bostock, told the news, the writer asked him if they had bought the lady too, and received the answer —"No." "Then," he said, "John Daniel will be dead in a month." Mr. Bostock agreed—as a fact we allowed two weeks too long. Friendship is more vital to gorillas than to chimpanzees, yet the whole secret of the wonderful attainments of the two Consuls—we thought the first the cleverer—lay in their being family pets. Since Consul II. learned to ride a bicycle in 1895, the world has swarmed with trained chimpanzees. It would be tedious to recount their tricks, more interesting to adduce instances of innate intelligence, which, wonderful in themselves, are likely to be surpassed in the future when more specimens live the eight or twelve years, which, in the opinion of Dr. Chalmers Mitchell, marks the limit of their mental growth. Counting was the first claimed proof of monkey development on rational lines—to the writer it seemed very much a case of self-deception; years ago he saw the famous Sally handing straws to her keeper, often the number he named, but it proved nothing;

as the subject interested him greatly, he tried many chimpanzees, with little real success; they were more successful in associating the shapes of letters with food—B for banana, for example, than in understanding the meaning of one or two, but the imaginary successes were astounding. One evening the keeper repeatedly asked his charge for straws up to fifteen, and always got the correct number. "Now," said the writer, "do not move." He remained perfectly still, and the mystified monkey presented big numbers, little numbers, any number to try to please him. The man had deceived himself by an involuntary shadow of a move which the chimpanzee had obeyed every time. But there are definite evidences of mind: shapes are understood, keys are quickly selected from a bunch, inserted in the keyhole, and turned. A chimpanzee at Belle Vue alone, went further and made the key, fitted it to the lock, and opened the cage door. It was only a square box key made by biting a bit of wooden hoop to shape, but it implied reasoning, observation, and deduction. The animal was Consul II.; Consul I. had been found loose in the gardens twice; the authorities imagined that he had made a key or two, and, on the basis of safety first, Consul II. was never allowed to handle keys, and therefore must have observed the key in the keeper's hand, seen the result, and made the numerous necessary deductions. Nuts and bolts, whether visible or invisible, are child's play to chimpanzees. Another chimpanzee at Belle Vue evolved a very clever food-

snatching trick; it was self-taught; in fact, objectionable to the management, who had a horror of promiscuous feeding. Visitors flirted nuts through the small wire netting placed to prevent it; usually they fell beyond the chimpanzee's reach: but he had a hoop which he passed upright between the bars of his cage, then, turning it horizontally over the nuts, reaped a rich harvest. If the hoop were beyond his reach he would drag it in with a small stick, and he learned in a few minutes without any help or demonstration to reach three sticks, all necessary to get the last and biggest, which alone could reach the nut. There his intelligence ended—he never appreciated the value of a curved handle. An Orang Utan at Rotterdam was equally clever; it gathered in a palm by throwing its blanket, and when the palm was put beyond its range, it tore the blanket almost in two, and with the extra length again attained the object. In Borneo one hears of them planting rice—is it true? Consul would obey as important and difficult an order—he was chief of the monkey police and would capture an escaped monkey on command.

They will work for us, but they also work and help one another. The following notes were written September 9, 1916:

More than Instinct?

Recent Observations of Chimpanzees

At Belle Vue we have a cage containing three female chimpanzees, two the Tango Twins (so

called from their amusing habit of reproducing a figure of the famous dance), and a later addition, much smaller and weaker, received into the company in the best of good fellowship. Attracted one day by loud screams I found this little animal seated on a beam yelling lustily. The middle one sat on the floor quietly eating a banana, and the largest, possessed of three bananas, was proceeding to climb the tree in the compartment. The difficulty of doing this with a hand and foot fully occupied made me curious enough to stay to note the result. The effort was in fact too great ; before the journey was half finished a second banana had to be carried in the mouth. Then a surprising thing happened. The upward movement continued until the big animal was within reach of the little one on the beam, who stretched down her hand. The other passed up a banana ; the crying, up to now insistent, stopped at once, and the two quietly enjoyed their meal.

Regular observation, undertaken since this abnormal proceeding, has disclosed a general tendency to kindness, with certain lapses and a rather amusing rough justice on the part of the largest animal, who has her own estimate of what is the "lion's share." Three bananas were thrown in the cage of which B took two. A promptly dispossessed her of one, of which she gave one-half to C, thus retaining one and a half for herself. At other times she will only pass on the empty skin.

A, the largest, which could easily rob the others, does not do so for her personal advantage. Of a banana given to C she received half, but without a struggle or a whimper, and when the fruit was eaten C divided the skin and gave A her portion. With B, A is not quite so friendly or perhaps so overpowering; from her she begs for dainties and keeps up a tremendous screaming until she is humoured. To test this I gave B a very large pear, which she proceeded to eat with great relish. The other chimpanzees fully recognised her stroke of luck, and came begging with great insistence, screaming and putting their arms round her neck, but without any show of violence. After a time they were allowed to take bits from her mouth, and this not being considered sufficient, and the pear being by now reduced to a shell, the happy owner broke off a fair-sized piece for the baby and a much larger portion for A, retaining a very little for herself—an arrangement that proved satisfactory to all parties.

Sometimes A will climb up the tree and then drop a banana to C below, but almost invariably each animal gets a share by mutual arrangement in a manner absolutely foreign to our usual experience (which requires either an excessive quantity of food well spread about or the keeper's presence in order to ensure proper feeding). There would seem here to be the germ of that co-operation and sympathetic communion which lie at the root of progress.

Their further education is the business of the scientist, not the showman ; like very small children they recognise shapes and associate with them ideas —the writer's own children and grandchildren could and can identify the tunes of a musical box by the teeth of the barrel or the indentations of the disk, or in gramophone records by the length of the name or a blur on the record—yours probably can do the same ; to you, an adult, these marks are incomprehensible.

Monkeys are equally quick ; Consul recognised a monkey picture and invariably raged at it. That aroused anger—would the pictured banana bring pleasure ?—if so, could the animal be taught to draw it. In disordered scrawlings with a pencil they delight—to ordered lines is but a step ; that step made, might we not get ideas—a pictured language older than the most ancient writings of palæolithic man. Might we not get an answer to the mighty mystery ?

Hadst thou a soul ?

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